

# DUN'S REVIEW

## and Modern Industry

A *Dun & Bradstreet* PUBLICATION

**AUGUST 1955**  
**75 cents**



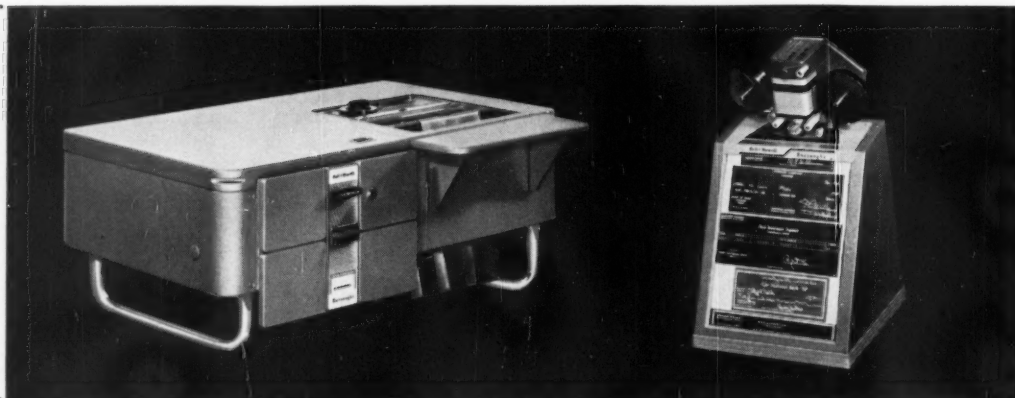
**COMPASS POINTS OF BUSINESS...WAR ON CORROSION**  
**INADEQUATE EXECUTIVES...INFLUENCING CONSUMERS**

# Now! New!

## What'll you have?

### The NEW Model 205 Microfilm Recorder

For situations in which you want a separate recorder, we recommend this compact equipment. It's actually a Micro-Twin with the Reader removed, thus giving you extra working space.



### The Micro-Twin Recorder-Reader

Here is the revolutionary new microfilming machine that has put the penny back into business! Imagine—a recorder and reader in one unit for less than you'd expect to pay for a recorder alone!



### The NEW Model 206 Microfilm Reader

For times and places where separate, portable Readers are needed. Weighs only 16 pounds, projects 8-, 16-, or 35-mm. film with same lens and film guide. Image can be completely rotated on screen.

## We've got the low-cost answers to your microfilming problems!

*If you keep records, here's the greatest microfilming news in years!*

Whatever your needs, Burroughs and Bell & Howell bring you a new, modern low-cost line of microfilming equipment to do the job quickly, efficiently and economically. The bellwether, of course, is the marvelous Micro-Twin Recorder-Reader in one unit. And now, to accommodate businesses of every size and nature, we proudly

present the new Model 205 Recorder and the new Model 206 Reader.

These units increase your record-keeping efficiency with: *automatic endorsing, automatic feeding, exclusive indexing meter, choice of reduction lenses, notable film economy and clear viewing.* Ask our branch office, listed in your phone book, for a demonstration. Burroughs Corporation, Detroit 32, Michigan.

**Bell & Howell**  
MICROFILM EQUIPMENT

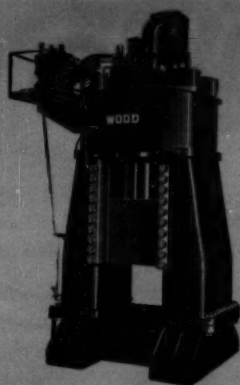
SOLD AND SERVICED BY  
**Burroughs**

WHEREVER THERE'S BUSINESS THERE'S

"Burroughs" and "Micro-Twin" are trade-marks







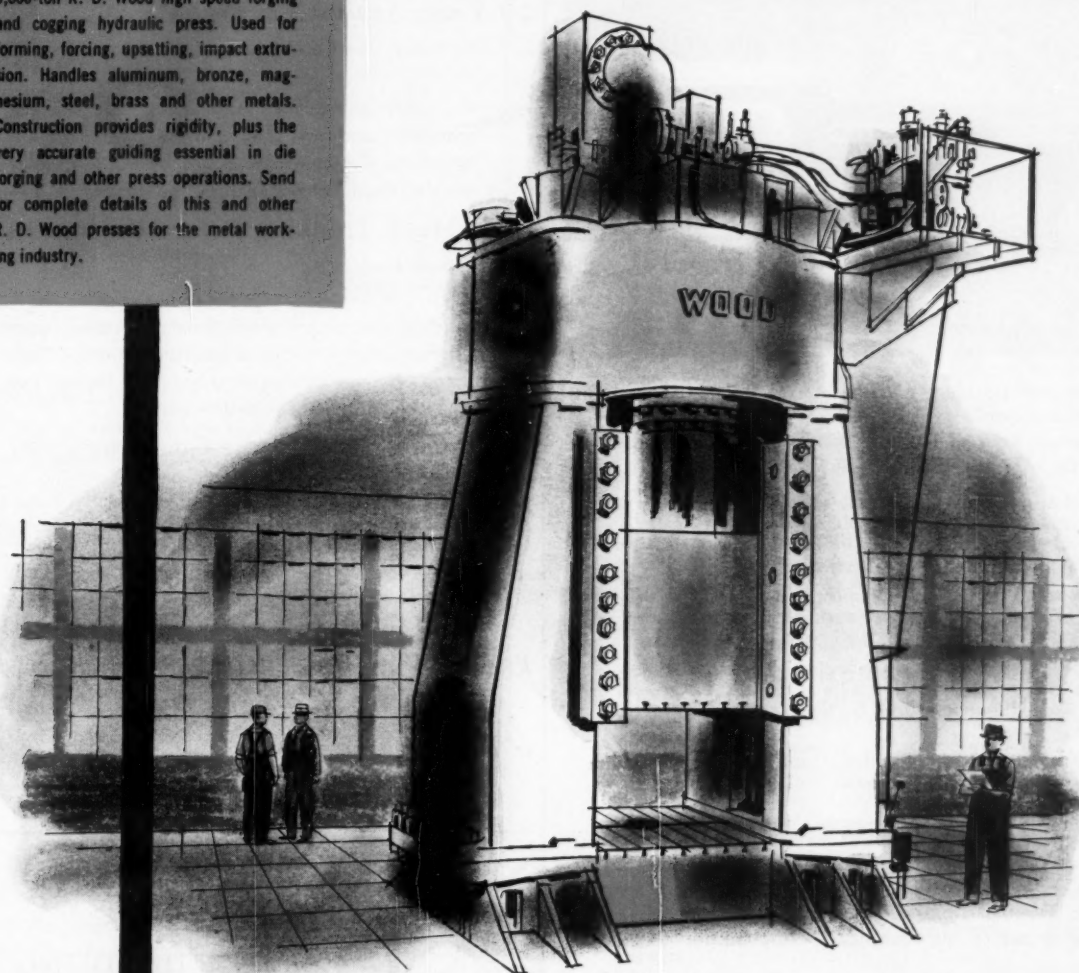
3,000-ton R. D. Wood high speed forging and cogging hydraulic press. Used for forming, forcing, upsetting, impact extrusion. Handles aluminum, bronze, magnesium, steel, brass and other metals. Construction provides rigidity, plus the very accurate guiding essential in die forging and other press operations. Send for complete details of this and other R. D. Wood presses for the metal working industry.

## 150 years of excellence

This is not an empty claim. It's a fact and a challenge.

In more than 150 years of service to industry, R. D. Wood's name has never appeared on a press of inferior quality.

You can see the proof of R. D. Wood quality in the precise design, select materials, and sound craftsmanship that distinguish our presses. And you can see the results of this quality in smooth, dependable performance, increased production, economical maintenance.



**R. D. WOOD COMPANY**

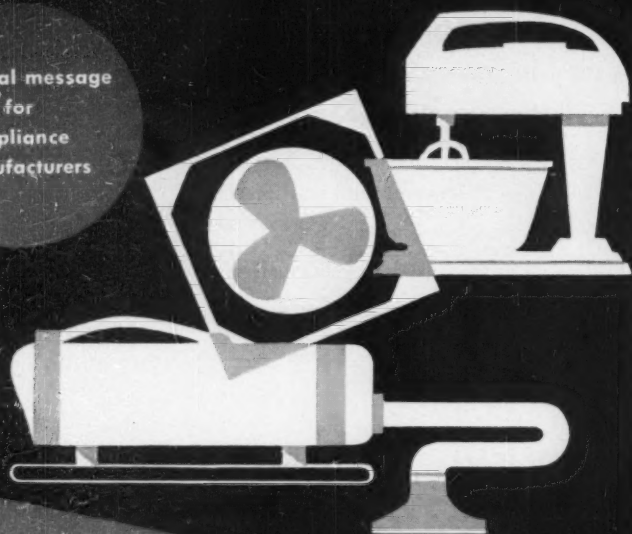
PUBLIC LEDGER BUILDING • PHILADELPHIA 5, PENNSYLVANIA

Representatives in Principal Cities



MAKERS OF HYDRAULIC PRESSES AND VALVES • FIRE HYDRANTS • CAST-IRON PIPE • GATE VALVES • GAS PRODUCERS • ACCUMULATORS

a special message  
for  
appliance  
manufacturers



need a finish  
that blocks corrosion by  
itself—or under paint?

specify

**IRIDITE**

You can solve any problem of non-ferrous finishing . . . maximum corrosion protection . . . sparkling clear or colored decorative finishes, firm and lasting base for paint . . . with these two words—"specify Iridite". For example—

- **ON ZINC AND CADMIUM** you can get highly corrosion resistant finishes to meet any military or civilian specifications and ranging in appearance from olive drab through sparkling bright and dyed colors.
- **ON COPPER** . . . Iridite brightens copper, keeps it tarnish-free; also lets you drastically cut the cost of copper-chrome plating by reducing the need for buffing.
- **ON ALUMINUM** Iridite gives you a choice of natural aluminum, a golden yellow or dye colored finishes. No special racks. No high temperatures. No long immersion. Process in bulk.
- **ON MAGNESIUM** Iridite provides a highly protective film in deepening shades of brown. No boiling, elaborate cleaning or long immersions.

**AND IRIDITE IS EASY TO APPLY.** Goes on at room temperature by dip, brush or spray. No electrolysis. No special equipment. No exhausts. No specially trained operators. Single dip for basic coatings. Double dip for dye colors. The protective Iridite coating is not a superimposed film, cannot flake, chip or peel.

**WANT TO KNOW MORE?** We'll gladly treat samples or send you complete data. Write direct or call in your Iridite Field Engineer. He's listed under "Plating Supplies" in your classified telephone book.

**ALLIED RESEARCH PRODUCTS**  
INCORPORATED

4004-06 E. MONUMENT STREET • BALTIMORE 5, MD

Manufacturers of Iridite Finishes for Corrosion Protection and  
Paint Systems on Non-Ferrous Metals, ARP Plating Chemicals,  
WEST COAST LICENSEE: L. H. Butcher Co.



Iridite is  
approved  
under  
government  
specifications

## DUN'S REVIEW and Modern Industry

READING  
AND  
ROUTING  
MEMORANDA



### Breaking Out of a Beehive . . . . . 35

CARL W. KEUFFEL  
*President, Keuffel & Esser Co.*

When production facilities become crowded, inefficiencies start to increase and costs tend to go up. It's time to spread out a little and here's how a conservative, middle-sized company accomplished it.

### What They've Learned in 20 Years Against Corrosion . . . . . 36

ANNESTA R. GARDNER  
*Industrial Editor*

Few materials are safe from attack, but you can protect products and plant equipment by taking advantage of the knowledge gained by this long-range study of wood, textiles, plastics, and metals.

### How Much Thinking Before Buying? 38

JAMES K. BLAKE  
*Marketing Editor*

Here's a fact-packed study that shows many purchases are made in a state of ignorance or indifference. If you believe your customers are smart buyers, you might be 80 per cent or more wrong!

### Employees Buy into the Company . . . 42

ALFRED G. LARKE  
*Employer Relations Editor*

Stock purchase plans for salaried employees of General Motors and Ford portend a big increase in this kind of program. Here are some of the main lines taken in a spate of post-war stock ownership schemes.

### Executive of Inadequate Personality . . 45

Who is he? What makes him a deficit to a company? How can he be handled? How can he be recognized? These and other questions are answered by a management man of a well-known company.

## Next Month:

### Your Guide to BETTER HANDLING

Materials handling is a universal problem and an increasingly costly one. This 18-page report will show how even good handling methods can be improved, how old plants can be modernized, and how new kinds of equipment can be put to work. Photographs, a giant checklist, and a survey of current practices will reinforce the text, and help each reader apply these pointers to his own operations.

Subscription: \$5 a year in U.S.A., and Possessions, and Canada. Elsewhere \$10. Single copy, 75 cents. Please state title and employing company when subscribing.

Published monthly by Dun & Bradstreet Publications Corporation. Editorial, advertising, and subscription office: 99 Church Street, New York 8, N.Y., Digby 9-3300. Publication office: 300 W. Adams Street, Chicago, Ill. DUN & BRADSTREET also publishes monthly *International Markets* and *Dun's Statistical Review*. The DUN & BRADSTREET organization serves American business in the promotion and protection of trade through its varied services supplying information on business enterprises here and abroad, marketing and survey services, Municipal Service Department, and other fact-finding and reporting activities.



# AUGUST 1955 DEPARTMENTS

## Heard in Washington..... 7

Reporting from Capitol Hill, Paul Wooton presents the thoughts behind the news.

## Voice of Industry.....12

Construction, steel, the new consumer, the community, and advertising.

## Business Men's Expectations.....23

The fourth quarter outlook gives promise of good things to come.

## The Trend of Business.....25 and Compass Points Quarterly

Charts, tables, and text illustrate the current economic state of the nation.

## Business Failures.....32

Failure and liability statistics—how many, where they occurred, and reasons why.

## Frontispiece.....34

Primitive manual labor still has its place in the sun—photograph by Devaney.

## Executive Bookshelf.....57

The latest in executive reading for instruction and information is reviewed here.

## New Methods and Materials.....61

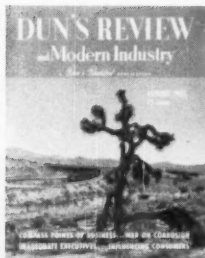
New fuel for production; new coatings for products; foams that cushion and protect.

## Films for Management.....75

U. S. Chamber of Commerce and American Management Association films reviewed.

## Here and There in Business.....83

A quick look at what's new in products, uses, and developments for management aid.



### Our Cover

The Mojave Desert near Victorville, Cal., presents a scene of modernization encroaching upon the domain of eternal sand, the Joshua tree, and heat, as a Santa Fe freight heads for Los Angeles.

COLOR TRANSPARENCY BY DICK STEINHEIMER

THE SEMI-ANNUAL INDEX of DUN'S REVIEW and MODERN INDUSTRY for the January-June 1955 period is available. Copies of this index, with listings according to subject, title, author, and companies mentioned, may be obtained upon request.

Copyright 1955 by Dun & Bradstreet Publications Corporation. Copyrighted under International Copyright Convention. All rights reserved under Pan American Copyright Convention. The title DUN'S REVIEW and MODERN INDUSTRY is registered in the U.S. Patent Office.

This magazine is indexed in the Industrial Arts Index, in the Public Affairs Information Service, and also semi-annually in an index available upon request to the publishers. . . . Member ABC, BPA, NBP, SBME, and MPA, . . . . Printed in U.S.A.



BUILDS EXTRA SELLING POWER INTO YOUR PRODUCTS



## THEY buy A. W. STRIP Steel, too! (Hot and cold rolled)

'They' are the people who buy products made with ALAN WOOD strip steel. 'They' are housewives, children, manufacturers—you and I.

Perhaps they can't always see the superior qualities derived through precise, metallurgical control and "custom-production" of strip steel—but they *do* know these qualities must be present—because of the product's strength, dependability and reputation.

If you require strip steel, your products deserve the "custom-produced" qualities of superior strip . . . for minimum waste . . . less wear and tear on tools . . . easier, faster production. They deserve ALAN WOOD strip steel.

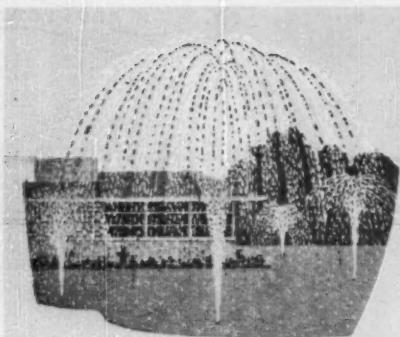
For products requiring hot or cold rolled strip or sheets, call upon the services of a versatile, integrated steel specialist with modern, up-to-date, continuous mills—where steel is produced to your specific requirements—ALAN WOOD STEEL COMPANY.

IRON PRODUCTS  
"Swede" pig iron  
STEEL PRODUCTS  
Plates (sheared)  
Hot rolled sheets  
Hot rolled strip  
Cold rolled sheets  
Cold rolled strip  
ROLLED STEEL  
FLOOR PLATE  
A.W. ALGRIP abrasive  
A.W. SUPER-  
DIAMOND pattern  
A.W. CUT NAILS  
MINE PRODUCTS  
COKE  
COAL CHEMICALS

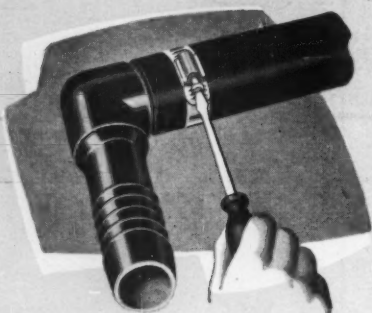
## ALAN WOOD STEEL COMPANY

steelmasters for 129 years • CONSHOHOCKEN, PENNA.

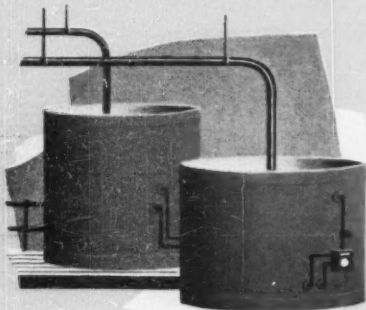
DISTRICT OFFICES AND REPRESENTATIVES: Philadelphia  
New York • Houston • Los Angeles • Atlanta • Boston • Buffalo  
Cincinnati • Cleveland • Detroit • Pittsburgh • Richmond  
St. Paul • San Francisco • Seattle • Montreal and Toronto  
—A. C. Leslie & Co., Limited SM-6



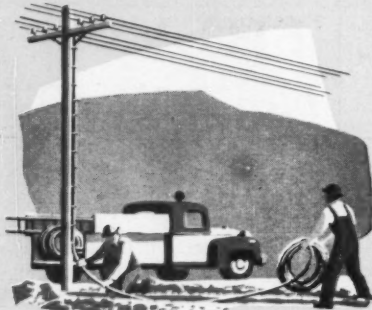
The economy of pipe made of BAKELITE Polyethylene, and resistance to damage by freezing, are two advantages for sprinkler lines, or temporary water or drainage lines.



Connections are dependable, easily made with simple tools. And, there are special types of pipe, like "two-in-one" piping used to connect jet pumps, and multiple tubes for automation.



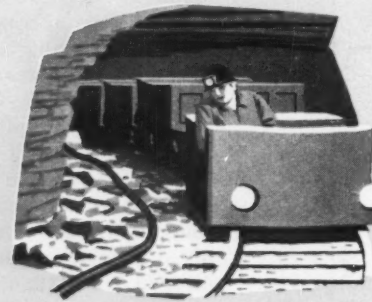
Pipe and tubing is excellent for handling chemical solutions, as well as for cold water, air lines and conduit that must be exposed to chemicals or corrosive surroundings.



Electrical conduit as employed by utilities for pole installations is speedily installed, economical, and provides a tight, weather-protected job. Flexibility makes it easy to bend.



A coil of this pipe, though hundreds of feet long, is so light in weight one man can carry it. It is economical and easy to install in one piece even around curves and corners.



Mines, oil fields, factories, construction work can all take advantage of pipe produced from BAKELITE Polyethylene for permanent as well as quickly installed temporary systems.

**S**ee all these ways to take advantage of lightweight, flexible, chemical resistant, easy-to-install, non-corroding polyethylene pipe and tubing

Surely you can put these benefits to work for your own business. Why not write today for names of manufacturers of pipe made from BAKELITE Brand Polyethylene. Address Dept. JG-42.



**BAKELITE COMPANY,** A Division of Union Carbide and Carbon Corporation **UCC** 30 East 42nd Street, New York 17, N. Y.  
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC





# HEARD IN WASHINGTON

WASHINGTON is exceedingly well pleased with the state of the Union and with the state of the world situation. Prosperity in the United States has fanned out until it includes nearly every business activity and encompasses nearly all areas.

Most officials feel that the United States properly may take credit for much of western Europe's prosperity which has an important bearing on the domestic situation. International relationships are more conciliatory. Looking ahead, most Government specialists see higher and higher standards of living, but if progress in that direction continues at double quick, as indicated by spiralling wage rates, shortness of breath may slow down the advance.



Labor leaders are taking note of the fact that to receive maximum benefits from pay increases the purchasing power of the dollar must be kept stable. David J. McDonald, of the steel workers, before the settlement was reached, made it a point to discuss that phase of the question with officials in Washington. It was pointed out to him that inflation not only reduces the purchasing power of the wage increase, but affects the value of everyone else's dollar. It is regarded as significant that a labor leader should take time in the midst of wage negotiations to inform himself as to the effect of increases on stability. Whether management has paid too high a price for peace will become clear as time passes. Many employers cannot match the new wage rates. Officials fear that this will cause internal stresses that will make for trouble.

Officials generally seem to follow the trend of thinking of the President's economic advisers. Last year the emphasis was on ways to stimu-

late activity. This year ways of keeping the economy from expanding too fast are stressed. There is plenty of exuberant comment, but it is coupled with admonitions that prosperity has its limits.

Bankers and lending agencies are being reminded that it is good business to keep customers happy but they must look beyond the present. The customer suffers most if too much credit is extended. The joy of a new house or a new car is offset when the borrower finds himself too heavily in debt. Unhappiness is certain to result from over-extension. Such advice is being applied to the purchase of stocks as well as real estate.

While no one denies that recent wage agreements have increased the pressure on prices the feeling is that the inflationary effect of wages is minor in comparison with the great force being exerted by the total of outstanding purchasing power. The purchasing power of the dollar in terms of consumer goods was the same in May as it was in May of 1952. The monthly announcement of that figure is being awaited with increased interest.

*For over 40 years Paul Wooton has been a member of the press galleries of Congress. During that time he has served as president of the National Press Club, the Overseas Writers, the White House Correspondents' Association, and the Society of Business Magazine Editors. He is currently chairman of the executive committee of SBME. Born in Indiana, Mr. Wooton has worked on papers in Mexico and the United States as well as covering several European capitals. An ability to ask the right questions of the right people has placed him high on the list of veteran newsmen in the nation's capital.*

Even those who are inclined to put the most favorable construction on developments readily admit that all curves have their valleys and that a dip in the economy might come any time. All they ask is that business will recognize it as a normal adjustment, not something calamitous. The long-term trend, they feel, is bound to be up, but a little belt-tightening along the way is certain to be necessary.



Vacancies in residential housing are so low that it should dispel apprehensions about overbuilding. This is shown by what the Commerce Department describes as "the most comprehensive housing survey ever undertaken." In that connection, however, attention is called to the need for frequent checks on vacancies because residential building has a way of stopping suddenly.

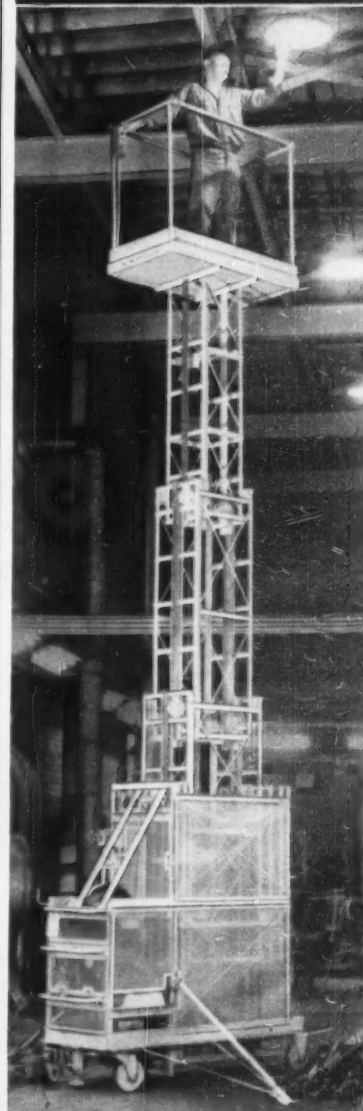
While the Attorney General has made no announcement of policy, the Department of Justice apparently is opposed to "fair trade" price maintenance. Opposition will be based on the need for protecting the consumer. The Department's surveys show that the effect of this legislation is to increase prices. Legal expense of enforcement efforts, it is contended, is paid, in the last analysis, by the consumer. Findings of lower courts that such legislation is unconstitutional will be supported by the Department of Justice when cases reach Supreme Court.

The Administration would have insisted on more than the temporary increase in the debt ceiling had there not been confidence that the budget for the next fiscal year can be brought close to a balance. Assuming that receipts can be kept at the present level, a substantial surplus in the cash budget seems probable. Room is being allowed for tax

THE MAN WHO FEELS SAFE  
WORKS BETTER

## Economy HI-REACH TELESCOPER

ENGINEERED FOR STRENGTH  
STABILITY AND SAFETY



Safety is our first consideration in building Hi-Reach Telescopers.

During the past quarter of a century of making Hi-Reach Platform Telescopers, our engineers have constantly improved the mechanical construction to obtain maximum stability, smooth time-saving lifting action, and safety.

Standard Models available from 10'-9" to 35 ft. high, and custom-built units as high as 100 ft. if you like.

**ECONOMY ENGINEERING CO., EST. 1901**  
4516 W. Lake St., Chicago 24, Ill.

ECONOMY ENGINEERING CO.  
4516 W. Lake St., Chicago 24

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

# Reo Helps Speedway

**Speedway's Executive Vice President D. S. Sucher reports**

—"Bigger loads at lower costs per trip are important factors in Speedway's operating efficiency increase of 20% within the last 16 months. Reo plays a big part in our progress. We've used most truck makes. Now over half of the trucks in our fleet of 140 vehicles are Reos. Reo V-8's pull our 10,000 gallon units. We are now testing one on an 11,100 gallon double-bottom trailer combination which will enable us to haul 1,100 extra gallons per trip."





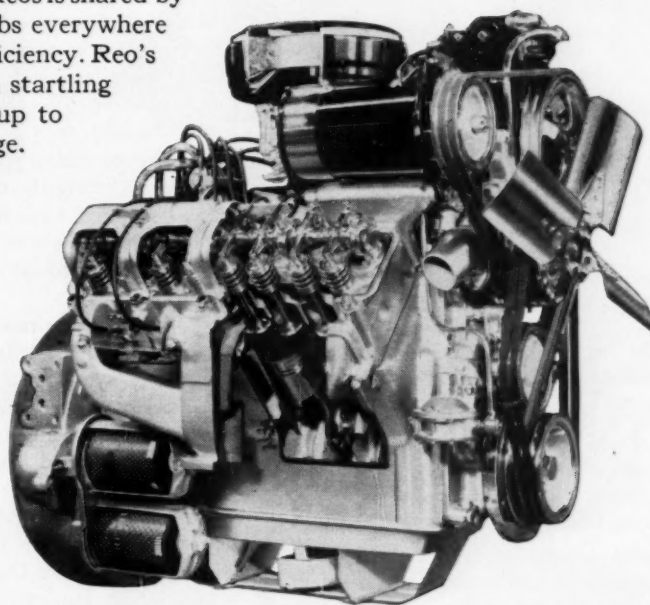
# Cut Operating Cost 20%

**World's toughest trucks with the wonder engines backed by 100,000 mile warranty . . .**

Speedway's cost savings experience with Reos is shared by fleet owners the nation over. On their jobs everywhere Reos are setting spectacular records for efficiency. Reo's powerful Gold Comet Engines develop a startling  $\frac{1}{2}$  horsepower per cu. in. displacement—up to 35% more efficient than industry average. No other engines deliver such responsive, usable horsepower to the wheels.

No other line has short stroke, wet sleeve construction throughout—truly the modern wonder engines for power, performance, and low cost maintenance. They're backed by a 100,000 mile warranty. What Reos are doing for others, Reos can do for you.

See what a Reo—world's toughest truck with the modern wonder engine—will do on your job today. Your Reo man will gladly arrange it.



**Most powerful V-8 truck engine** ever built in horsepower-per-pound performance. Advanced engineering features of Reo's Gold Comet V-8's include short stroke, wet sleeve design, high velocity cooling, dual oil filtration. 195 and 220 horsepower—in gas or LPG models.

# REO

SUBSIDIARY OF **BOHN** ALUMINUM & BRASS CORPORATION

Reo Motors, Inc., Lansing 20, Mich. • Toronto, Ontario

TRUCKS, BUSES AND GOLD COMET ENGINES FOR ORIGINAL EQUIPMENT, INDUSTRIAL AND REPLACEMENT—LPG OR GAS



## How to choose the Right Closure for Your Packaging Needs!



**W**HETHER you now use stapling, gluing, steel strapping or gummed sealing tape as a closure, Hudson has an improvement to give you more speed, more efficiency, more protection, and more economy too! Select one of these products and let us send you a free testing sample:

**FAST WELD** for speed in two-strip\* production line sealing—an overall center seam protection that beats stapling, stitching or gluing. The fastest, most labor-saving closure possible. Reinforced in both directions with Fiberglas®, *Fast Weld* comes to you with an extra heavy coat of Hudson's exclusive adhesive—*Supple-ized®* for easier handling.

\*Authorized by amended U.F.C. Rule 41

**BLUE RIBBON** for speed in complete closure. The quality tape with incredible speed of adhesion. Just one fast sweep of the hands and you get a tighter, more permanent seal against dust, smoke, moisture, vermin. The secret—Hudson's exclusive adhesive, *Supple-ized* to give you instant full depth moistening... quicker, better sealing.

**ORANGE CORE** for low cost standard sealing. Every inch on every roll sticks with the same bulldog grip because Hudson controls all its ingredients. Hundreds of thousands of users depend on Orange Core's consistently superior quality and have made it the world's largest selling gummed sealing tape.

Quality Products by

**Hudson**  
PULP & PAPER CORP.

477 Madison Ave., New York 22, N. Y.



**P.S.** On your letterhead—write Dept. D-8 and tell us which product you want to free-test... *Fast Weld*, *Blue Ribbon*, or *Orange Core*!

reduction. Further reductions in expenditures are being anticipated. Receipts probably will be augmented by sales of surplus commodities.



Regulated industries are suffering because sufficient profits are not allowed for research. Public service commissions are being told that rates to the public would be lower and the service better if returns on investment were high enough to eliminate obsolescence and stimulate studies looking to improvement in equipment and use.

The Treasury's July financing, which was a compromise with the Federal Reserve position, has proven to be well-adjusted to the financial situation. The money needed was obtained at a moderate cost and did something to stretch out the debt. Getting the national debt on a long-term basis has been recognized from the start as a tedious job to be stretched many years.

Both the Department of Agriculture and the Commerce Department are sympathetic to the demands for more detailed figures covering the spread in the price the producer gets and that which the consumer pays. The price spread in farm products has been investigated periodically through the years by Congress and the Department of Agriculture. Studies of the subject in connection with non-agricultural goods have not been as thorough. It is the contention of some groups that most of the spread should be regarded as "value added during distribution." It is believed this will help dispel the widely-held idea that most of the costs after leaving the producer are parasitical.

State regulatory bodies are strongly opposed to the recommendation in the transportation report that the Interstate Commerce Commission be given authority to discontinue unprofitable passenger trains. The report says such losses are having a serious effect on the over-all capacity of railroads to provide mass transportation. State com-

missioners say that they have been liberal in allowing discontinuances. None of the bills implementing the transportation report has made any progress. A majority of the members of the ICC feel that they already have authority to put most of the report's recommendations into force and are inclined to proceed on that assumption. In order to get a judicial ruling the ICC, on the ground that it is an undue burden on interstate commerce, may order abandonment in the pending New Jersey-New York railroad case.



Now that Congress has disposed of foreign trade legislation, the shouting has quieted down. Fears of imports seem to be diminishing. Both Government and private industry are paying increased attention to programs looking to higher living standards abroad. Under present world conditions higher wages in foreign countries seem more likely to be a factor in reducing competition than any prospect of increasing import duties. Automobile manufacturers anxious to increase exports are encouraged by the prospect for higher purchasing power and for lower gasoline prices abroad.

Executives responsible for the investment of funds seem to be regarding bonds with more favor, it is noted by Government specialists. They do not expect any large-scale shift from stocks to bonds, but the mid-Summer yield was narrowing.

That Russia is having internal economic difficulties is indicated by the volume of hammer-and-sickle gold flowing into European and Far Eastern markets. Judging from the amount of foodstuffs purchased for Russian account, the farm program there must be in a bad way. It takes more than an iron curtain to conceal economic weaknesses.

One of the difficulties being encountered in the efforts to increase East-West trade in Europe is the fact that the line of demarcation between military and civilian items is very hard to define.

*Paul E. Euston*

WASHINGTON, D. C.

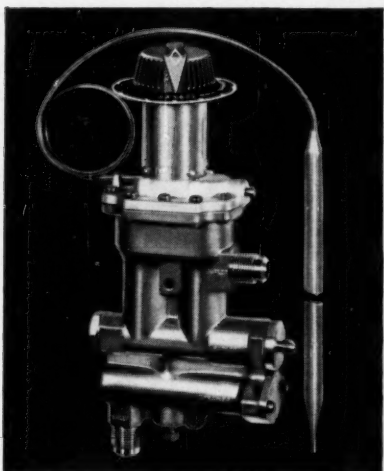


*manufacture of*

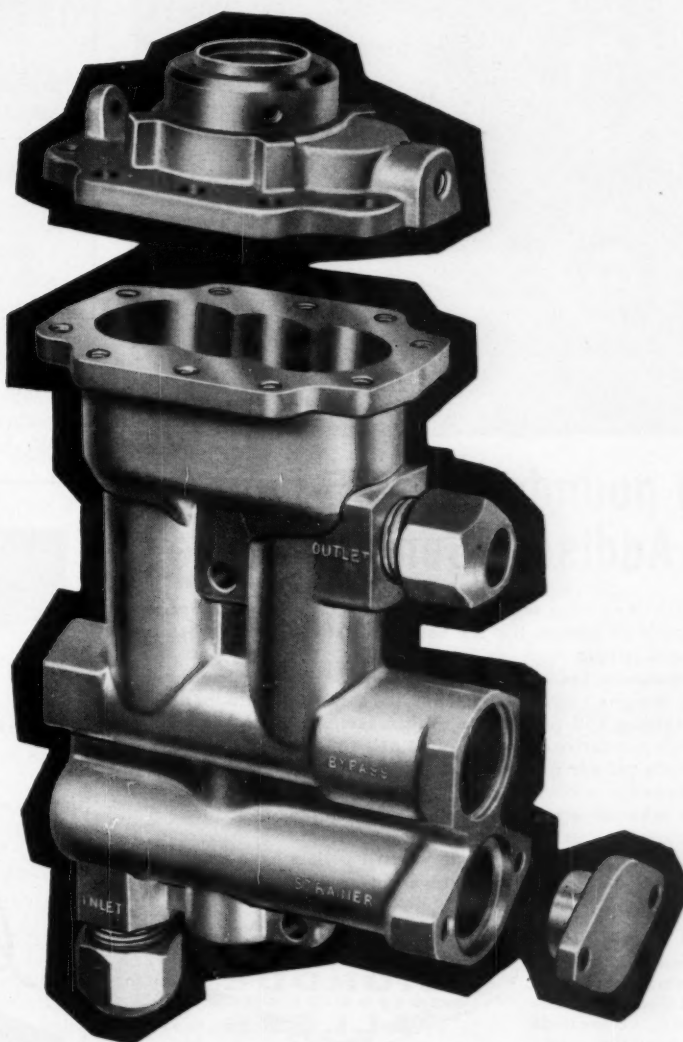
**DETROIT SELECTAFLOW CONTROLS**

*greatly improved by*

**MUELLER BRASS CO. FORGINGS**

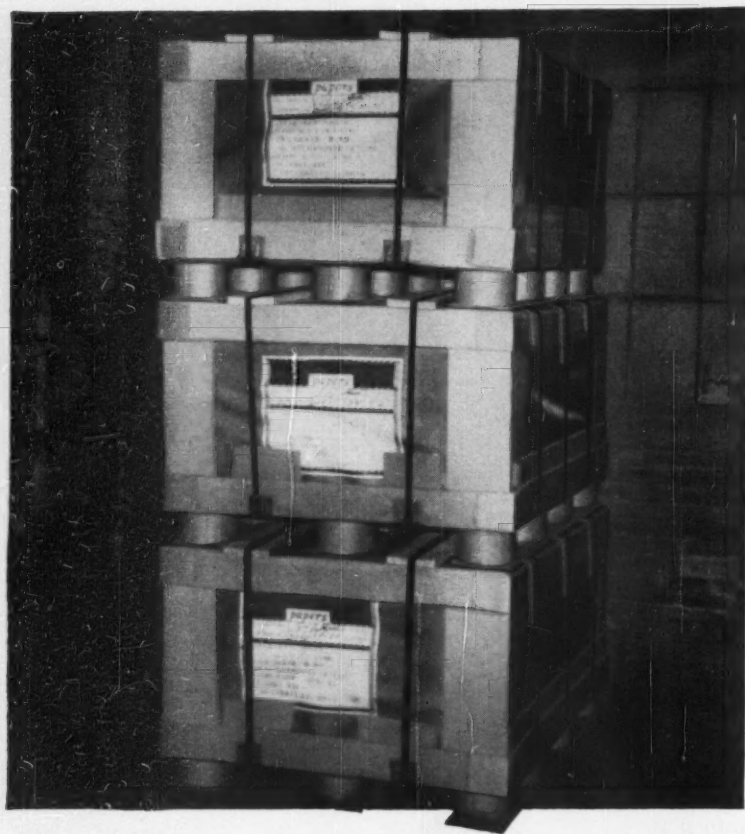


One of the finest thermostat control mechanisms for year-around air-conditioning systems is the automatic SELECTAFLOW, a product of the Detroit Controls Corporation. To maintain the high quality of this efficient unit and at the same time speed up and simplify assembly, the body, bonnet and side cover are being forged and completely machined to close tolerances by the Mueller Brass Co. In all, thirty-four machining and finishing operations are performed. This is but one more example of how Mueller Brass Co. machined forgings have improved a product and speeded production. With a wide range of copper-base alloys for forgings, a tremendous background of product engineering, and facilities for precision finish machining, the Mueller Brass Co. can supply machined brass or bronze forgings to your exact specifications. It will pay you to consider Mueller Brass Co. forgings for your new or redesigned products. Write us for full color catalog and technical information.



**MUELLER BRASS CO.**

**PORT HURON 46, MICHIGAN**



## 12,000 pounds on a 35-pound Signode Addison-Semmes pallet!

Here—from Signode—is another way to cut shipping costs which has proved successful in hundreds of plants. It's the use of Signode Addison-Semmes expendable fibreboard pallets.

These pallets save money because they're lighter. For example, each pallet in the picture above weighs 35 pounds. Each holds a 4,000-pound load. Each replaces a skid weighing 150 pounds—a weight saving of 115 pounds per unit, or 2300 pounds per carload, in this case. At a freight rate of \$1.00 per cwt., this saves \$23.00 per car on freight alone.

Your customer benefits, too. The pallets are easier to handle with their 4-way entry. They take up less warehouse space, empty or loaded. And they're easy to dispose of—can be sold as waste paper.

Signode Addison-Semmes expendable fibreboard pallets have many other advantages. They are available in sizes and weights your shipments require. Send for the facts today.

### Signode now licensor

Signode Addison-Semmes expendable pallets will continue to be made by the former Addison-Semmes licensees—a selected, nationwide group of fibreboard container manufacturers.



## SIGNODE Steel Strapping Co.

SIGNODE ADDISON-SEMME'S DEPARTMENT  
2665 N. Western Ave., Chicago 47, Ill.

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-wide  
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

# VOICE OF INDUSTRY

## Construction problems: Shelter and mobility



"We have not satisfied . . . a fourth basic desire . . ."

L. M. CASSIDY

Chairman of the Board, Johns-Manville Corp., before Mortgage Bankers Association of America, New York, N. Y.

Our life to-day is dominated to a considerable extent by the automobile. Yet its use is frustrated in every direction and in a thousand ways by the present horse-and-buggy transportation pattern of our cities, towns, urban approaches, and highways.

We have not satisfied in a mod-

ern way a fourth basic desire in man—the urge to move around. Here we are definitely hamstrung. The automobile has provided the instrument but we attempt to use this modern means of transportation in a framework inherited from the horse-and-carriage days.

It will require a stupendous effort on our part if we are to solve these twin problems of shelter and mobility. But it is this all-out effort to solve them that will constitute the prime-mover that will enable our economy to perform on a scale big enough to support 200 million people and a labor force of 80 million or more.

I have mentioned the important rôle already being played by the construction industry in our economy. It has never been so important as to-day. But it will not and cannot hold back. To-day it may represent almost one-sixth of our total output of goods and services.

## "National" TRUCK LEASING EXPERIENCE

IS AVAILABLE TO YOU

*locally!*



Truck users! You will be pleased with our all-service truckleasing.

America's leading firms utilize the efficiency of our specialized facilities. Forget your problems of replacement, breakdowns, repairs, insurance, licenses, paper-work, road calls, tied-up capital and extras. Know your costs in advance. Let us engineer your fleet to fit your exact needs.

don't buy...

Members in principal cities

## National TRUCK LEASING SYSTEM

23 EAST JACKSON BOULEVARD CHICAGO 4

Look up National Truck Leasing System in your local 'phone book, or write for "How Leasing Helps Your Financial Statement" and a listing of NTLS Companies in brochure No. D-7

## LEASE your trucks





*"It's like waxing your floors with a film of plastic"*

WHEN you apply new SUPER WESTWAX it's just like laying down a protective sheet of tough, transparent plastic on your floors.

With NEW SUPER WESTWAX you get

- brilliant gloss
- extra durability
- freedom from discoloration
- easier maintenance

Why? Because this heavy-duty formulation contains — West's crystal clear Plastic Emulsion, MIRITE® and prime #1 yellow Carnauba Wax.

IT combines all the features of the finest floor protection in a single wax:

- dries to a hard, mirror gloss
- resists scuffing from traffic
- resists water
- requires no polishing

And SUPER WESTWAX is slip resistant — meets Underwriters' Laboratories requirements for floor treatment materials.

LET a West floor expert demonstrate SUPER WESTWAX on your own floor — show you how easy it is to use. No obligation, of course. Just send the coupon.

NEW  
SUPER  
WESTWAX  
contains  
MIRITE®  
PLASTIC  
EMULSION

OLDEST AND LARGEST  
COMPANY OF ITS KIND  
IN THE WORLD



WEST DISINFECTING COMPANY  
42-16 West Street, Long Island City 1, N. Y. (Branches in principal cities)  
In Canada: 5621-23 Casgrain Ave., Montreal

Dept. 1

- ☐ I'd like a free copy of your folder on SUPER WESTWAX.  
☐ I'd like to have a WEST representative telephone me for an appointment.

Name \_\_\_\_\_

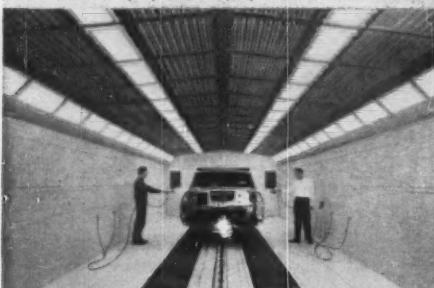
Position \_\_\_\_\_

(Tear out this coupon and mail it with your letterhead)

# COMPLETE *Finishing* SYSTEMS

... for ENAMELS • LACQUER • PAINT • VARNISH

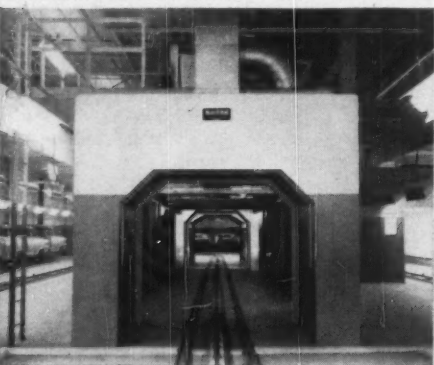
Interior of Mahon Pressurized Tack-Off Enclosure at entrance to Finish Coat Spray Booths. Spray Booth is visible in rear.



Mahon Dry-Sump, Down-Draft, Hydro-Filter Spray Booth with Remote Sludge Tank and Automatic Sludge Unloader.



Mahon Down-Draft Deadener Booth. Clean Filtered Air is supplied from above—Fumes are drawn down and out at bottom.



Mahon Dry-Off Oven with Cooling Tunnel at Exit End. Finish Baking Ovens are Similar with Multiple Controlled Heat Zones.

... the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!

Over four thousand five hundred feet of conveyor carries automobile bodies through the various finishing operations in this Complete Mahon Single Production Line Finishing System.

## WHY Do So MANY Manufacturers BUY Complete MAHON FINISHING SYSTEMS?

The answer to that question is very simple. In the first place, they want Mahon KNOW-HOW. In the second place, they want their entire finishing system planned, coordinated, engineered and installed by one responsible organization. In other words, they want one responsibility for final results—which are the quality and the cost of the finish on a product. Many things enter into these two end result items . . . most important are the operating efficiency and the operating cost of the finishing equipment. Most manufacturers have found that this is where the true worth of Mahon equipment shows up . . . it isn't built to a price, it is built to do a job. If you have a finishing problem, or are considering new finishing equipment, you, like thousands of other manufacturers, will find that Mahon engineers are better qualified to advise you on both methods and equipment requirements . . . and better qualified to do the all-important planning and engineering of equipment—which is the key to fine finishes at minimum cost. You will find also, that Mahon equipment is built better for more economical operation over a longer period of time—a factor to be weighed carefully when comparing initial cost figures. Mahon will do your complete job on one contract . . . undivided responsibility for the entire system insures proper coordination and safeguards you against complications which can upset your production schedules. See Mahon's Insert in Sweet's Plant Engineering File for information, or write for Catalog A-655.

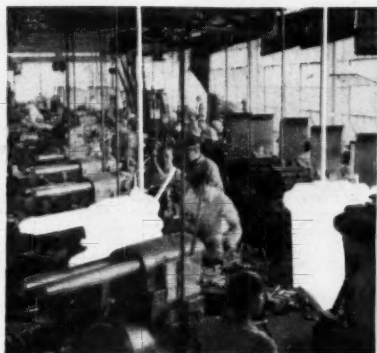
### THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 34, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning, Pickling, and Rust Proofing Equipment, Hydro-Filter Spray Booths, Dip and Flow Coaters, Filtered Air Supply Systems and Drying and Baking Ovens, Cooling Tunnels, Heat Treating and Quenching Equipment for Aluminum and Magnesium, and other Units of Special Production Equipment.

# MAHON





## American Appraisals eliminate "Ghosts" in property accounts

An American Appraisal original cost study and check of physical assets often reveal items of property disposed of, but not eliminated from property records—affecting costs, profits and taxes.

### The AMERICAN APPRAISAL Company

leader in property valuation  
HOME OFFICE: MILWAUKEE 1, WIS.

## SAVE MANPOWER... SPEED LOADING... REDUCE COSTS with MILWAUKEE MAGNESIUM Dock boards for truck or rail

**JOB-ENGINEERED**  
Design, size and  
capacity to fit  
your needs.



**SERIES F**  
Full length position lock,  
60 models, to 3000 lbs.  
capacity.

**SERIES T**  
Low-cost Hand Truck Special. 24 models, to 2000 lbs. capacity.



Let MPM representatives recommend a cost-saving answer to your loading problems, with job-engineered or standard dockboards.



758 W. Virginia St., Milwaukee 4, Wis.  
DESIGNERS and FABRICATORS for  
INDUSTRY, COMMERCE and GOVERNMENT

I can envision a period, say ten or twelve years from now, when it will represent one-fifth of our economy's annual output...

Just as the building of the railroads in another era gave the stimulus to our economy so, too, great express highways across the country will create new industries, new housing projects, and other developments.

### Steel needs for the future



"...expansion from raw material supply ... to finished product."

**ARTHUR B. HOMER**

President, Bethlehem Steel Company, before American Iron and Steel Institute, New York, N. Y.

It is estimated that the total national production of goods and services may be expected to grow from the current level of some \$370 billion to an annual average gross national product of perhaps \$570 billion in fifteen years. We know that the growth in the demand for steel in the past has closely paralleled the growth in GNP. Therefore, if the projections for the economy as a whole are realized, the steel industry will need an ingot capacity of about 185 million tons in fifteen years to handle peak requirements.

If steel is to remain a free industry in a free economy without Government prodding or intervention, we will have to meet this demand with an increase in ingot capacity of something on the order of about four million tons a year over the next decade and a half. This means about a 50 per cent increase for all of us in the next fifteen years if the present relative capacities of steel companies are maintained.

Some of this increase may be met through improved efficiency and technological advances, but for many it will also mean expansion from raw material supply all the way through to the finished product. At best it will be costly and must be in addition to the cost of replacement of existing facilities



## ...only Executone combines BOTH!

### IN THE WORLD'S MOST ADVANCED INTERCOM SYSTEM!

• For the first time in any intercom system you can answer calls from across the room—and at the same time enjoy positive assurance that no one can eavesdrop on conversations in your office. Executone's exclusive "CHIME-MATIC"® signalling announces every call with chime and signal light—warns that your circuit is open.

### SAVE TIME—get more work done!

Thanks to Executone's "Remote Reply", employees can now answer calls without interrupting their work. You get instant response without loss of working time. You eliminate waiting and costly "call backs" when phones are

busy. Roving employees are located quicker. You give instructions, get information without delay, yet you have "privacy protection" at all times. Work flows smoothly. Every hour becomes more productive! Executone soon pays for itself in many ways. Ask for full details. No obligation.



## Executone INTERCOM SYSTEMS

### GET THE FACTS

EXECUTONE, INC., Dept. V-1 • 415 Lexington Ave., New York 17, N. Y.

Without obligation, please send me full data on Executone Intercom. I am particularly interested in:

- ☐ INTER-OFFICE COMMUNICATION
- ☐ INTRA-PLANT COMMUNICATION
- ☐ SWITCHBOARD RELIEF
- ☐ LOCATING PERSONNEL

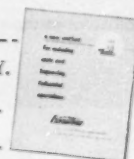
Name.....

Title.....

Firm.....

Address.....City.....

In Canada—331 Bartlett Ave., Toronto



The Sand Viper, desert dweller of North Africa, hides from his enemies by the precise movement of certain muscles that causes his entire body to submerge in the sand.



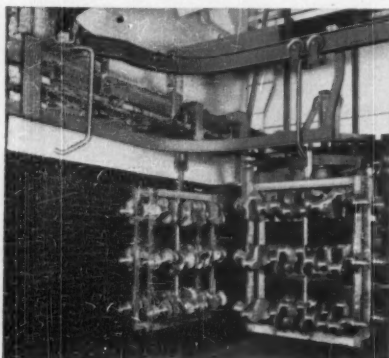
## Specializing in CONTROLLED motion

By "controlled" movement we mean that it is possible for you to schedule the flow of materials to coincide with your production machine capacities . . . *automatically*, and with split-second precision.

The science of automatic handling and transferring of materials goes by the name of *automation*. The equipment designed to do all this often goes by the name of *Allied*. For automation is *Allied's* business!

Some of the technological progress important to industry today was brought about by *Allied* know-how. *Allied's* staff of automation experts is fully qualified to eliminate the production bottle-necks in your business too!

**PIONEERS IN AUTOMATION** . . . the design and fabrication of fully automatic material handling systems.



This Allied Conveyor System provides for automatic selection of any given load on a main line conveyor, transferring it to auxiliary lines for intermediate production steps—then automatically back to the main conveyor.



For further information ask for Allied Catalog 953

**ALLIED AUTOMATION DIVISION**

ALLIED STEEL and CONVEYORS, INC. • 17355 Healy Avenue, Detroit 12, Michigan

due to obsolescence and depletion. Some of the cash to carry this out may generate from normal depreciation, from rapid amortization, or from revision of tax laws to permit greater accumulation of reserves and from borrowings or equity funds, but in the end the basis for sound expansion or replacement of facilities rests upon the operation of the business on a sufficiently profitable basis.

*The consumer always looks for something new*



"... one of the vital factors in business today."

**WILLIAM B. MURPHY**

President, Campbell Soup Company, before Investment Bankers of America, Santa Barbara, California.

The point I want to make . . . is the very great importance of ample margins—of making enough money to make a business grow. A slim profit is not enough. A company should not aim too low.

This has always been important—but it is, I think, doubly important to-day for a new reason. We are dealing with a new kind of consumer in this country—a consumer with a new kind of attitude—who is making the competitive situation much tougher than it ever was before for all of us.

The modern consumer has grown accustomed to the idea of new and better products every year. He has grown to expect improvement as normal. No matter how new and wonderful something is, this consumer takes it for granted that next year or the year after the manufacturer will find a way to improve it. Of course, the truth of the matter is that the progressive manufacturer is able to stay ahead of this demand because he knows it's good business to foster this desire for better things by suggesting them ahead of the time the consumer demands them, or before a competitor beats him to the gun.

Any business that fails to recognize this widespread consumer expectancy of progress will be overlooking one of the vital factors in business to-day.

**No. 1** in 50,000 Firms

*Because It Outlasts Ordinary Brushes*  
**3 to 1**



27 Speed Sweep styles and sizes to meet every sweeping need. Write for prices today.

**MILWAUKEE DUSTLESS BRUSH CO.**  
530 N. 22nd St., Milwaukee 3, Wis.

No. 17 in a series

**BATON**

builds for  
**University of Pennsylvania**

★  
**Baton Construction Corp.**  
PHILADELPHIA

**DRAKE, STARTZMAN, SHEAHAN AND BARCLAY**

Distribution and Materials  
Handling Consultants

CONTROL, MOVEMENT and STORAGE  
OF MATERIALS

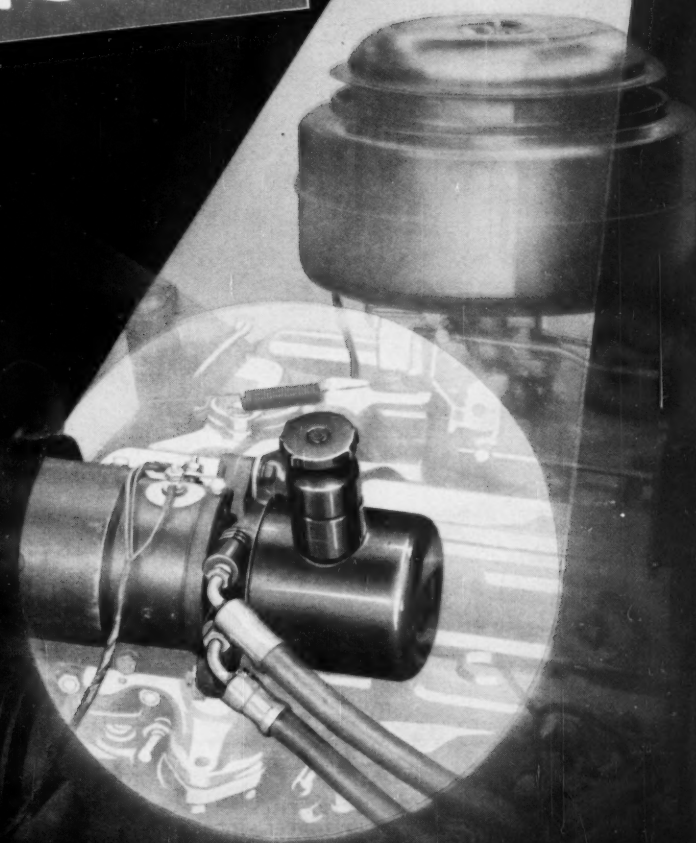
41 East 42nd Street New York 17, N.Y.

### Materials Handling

Don't miss "Better Handling" in the September issue of DR&MI. This provocative feature reveals the challenge management must meet if productivity is to be improved and profits increased.



# VICKERS® PUMPS IN THE AUTOMOTIVE SPOTLIGHT



MORE **VICKERS** VANE TYPE PUMPS *than all other makes combined* are used for HYDRAULIC POWER STEERING

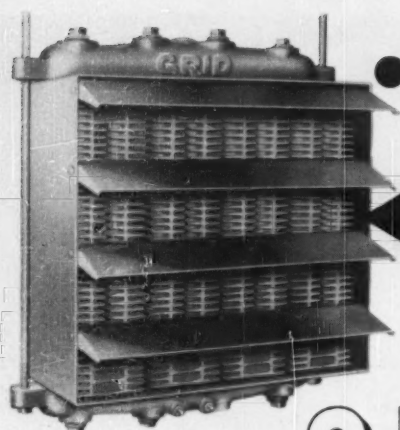
Here is another example of Vickers engineering and production "know how." This new Series VT21 generator-mounted vane type pump supplies the hydraulic power for steering on one of the 1955 popular makes of cars. It saves up to 45 per cent in weight and requires considerably less mounting space than other pumps on similar applications.

## VICKERS Incorporated

DIVISION OF SPERRY RAND CORPORATION  
1424 OAKMAN BLVD. • DETROIT 32, MICH.

ENGINEERS AND BUILDERS  
OF OIL HYDRAULIC EQUIPMENT  
SINCE 1921

2183



# GRID

## UNIT HEATERS

*Trouble-free heating service in the...*  
**Nation's Leading Industries since 1929**

### ...NO Maintenance or Repairs

*The reasons for this wide acceptance...*

GRID'S All-Cast construction having similar metals in contact with steam prevents electrolytic corrosion.

GRID'S ability to withstand steam pressures up to 250# P.S.I.

GRID'S low outlet temperatures, proper fan sizes and motor speeds assure delivery of warm comfortable air in ample volume, directly to the spot where it is needed. Maintenance cost conscious management men turn to GRID for relief from the continuous expense of heating failures experienced with ordinary unit heaters. GRID Unit Heaters installed in 1929 are still operating today... the only attention needed has been an occasional oiling of the motor. No ordinary unit heater can approach this record.

#### • STEEL MILLS

United States Steel  
 Allegheny Ludlum  
 Inland Steel  
 Bethlehem Steel Corp.  
 Carnegie Illinois Steel Co.  
 Wheeling Steel Corp.  
 Youngstown Sheet & Tube Co.  
 Armco Steel Co.  
 American Steel & Wire Co.  
 American Chain & Cable Co.  
 Etc.

#### • PAPER PRODUCTS

Marathon Corp.  
 Everett Pulp & Paper Co.  
 West Virginia Pulp & Paper Co.  
 Consolidated Water Power & Paper Co.  
 National Container  
 Celotex Corp.  
 Etc.

#### • CHEMICAL PLANTS

E. I. Du Pont Chemical Co.  
 Monsanto Chemical Co.

Merck & Co., Inc.  
 Allied Chemical & Dye Corp.  
 Victor Chemical Works  
 Dow Chemical Co.  
 Etc.

#### • RAILROADS

New York Central  
 B & O R.R.  
 Great Northern  
 Canadian Pacific  
 Santa Fe  
 Chesapeake & Ohio  
 Chicago North Western  
 Pennsylvania  
 Illinois Central  
 Northern Pacific  
 Milwaukee Road  
 Etc.

#### • AUTOMOTIVE

Electric Auto Lite Co.  
 General Motors  
 Ford  
 Kelsey Hayes Wheel  
 B. F. Goodrich  
 U.S. Rubber Co.  
 Goodyear  
 Etc.

#### • ELECTRICAL APPLIANCES

General Electric Co.  
 Bendix Corp.  
 Louis Allis Co.

#### • FOOD PRODUCTS

Armour  
 Swift  
 General Foods Corp.  
 Kraft Foods  
 Bearrice Foods  
 George A. Hormel Co.  
 Borden Co.  
 Penick & Ford  
 Etc.

#### • MISCELLANEOUS

Johns-Manville  
 Minnesota Mining & Mfg. Co.  
 International Harvester  
 Hercules Powder  
 Falk Corporation  
 Armstrong Cork  
 National Lead Company  
 Masonite  
 Standard Oil Co.  
 Sinclair Refining Co.  
 Union Carbon & Carbide

Get the full story today. Ask for booklet,  
**CORROSION IN UNIT HEATERS**... it's yours upon request.

**D. J. MURRAY MANUFACTURING CO.**  
 Manufacturers Since 1883 • WAUSAU, WISCONSIN  
 REPRESENTATIVES IN ALL PRINCIPAL CITIES

Now, this competitive race for better products is expensive. It involves, as you know, large outlays of capital for new plant and plant improvement. It requires very substantial sums for research. . . .

It has become a modern rule of business that only by allocating large sums to progress can we grow and prosper in to-day's competitive economy and so maintain healthy organizations for workers and investors.

*What industry expects of a community*



ROY C. INGERSOLL

President, Borg-Warner Corporation, before Annual Meeting, Muncie (Ind.) Chamber of Commerce.

*"... a better community... that will attract new industries."*

It is the serious business both of the business leaders and of the labor leaders of any community to keep that community in a climate that nurtures industry and therefore encourages greater and greater growth and greater employment. . . .

A city, like a company, is constantly faced with industrial competition. A city must always be alert not only to develop and exploit its advantages as a better community in which its own industries can expand, but as one that will attract new industries. Similarly, it must be known as a community which pays fair wages and which insists upon good working conditions, and which expects commensurate co-operation on the parts of employees and their fellow citizens.

An industry has other things that it can expect of its good neighbor, the community. It can expect a forward-looking municipal administration—one less concerned with votes than with sound, genuine progress that will match the best that any other comparable community can offer. . . .

A community owes many other things to the industries in its midst and to the employees of those industries. It owes generous support to the churches. It owes new parks, added recreation facilities, and the

## For Faster, Easier PALLET MOVING

USE

**"Weld-Bilt"**  
**PALLET TYPE**

**HYDRAULIC LIFT TRUCKS**



You'll speed up and simplify moving of a greater variety of single or double-faced pallets — with the "Weld-Bilt" Pallet Truck! Here's why: Sturdy forks, with greased-for-life ball bearing wheels, multi-stroke hydraulic lift, accelerator-type lower pedal, "anti-kick-back" safety handle, front wheel equalizer — many other long-service features.

Write for "Weld-Bilt" Bulletin LT854.

Other "Weld-Bilt" Products:

Hydraulic Lift Trucks—Mechanical Lift Trucks—  
 Portable Elevators—Automatic Conveyor-Lift Elevators—  
 Hydraulic Lift Tables—Platform Trucks—Skid Platforms—Special Equipment.

**WEST-BEND EQUIPMENT CORP.**  
**MATERIALS HANDLING ENGINEERS**

303 WEST WATER STREET • WEST BEND, WIS.

## Big Numbers

**boost efficiency**



**FORCE  
 Columbia**

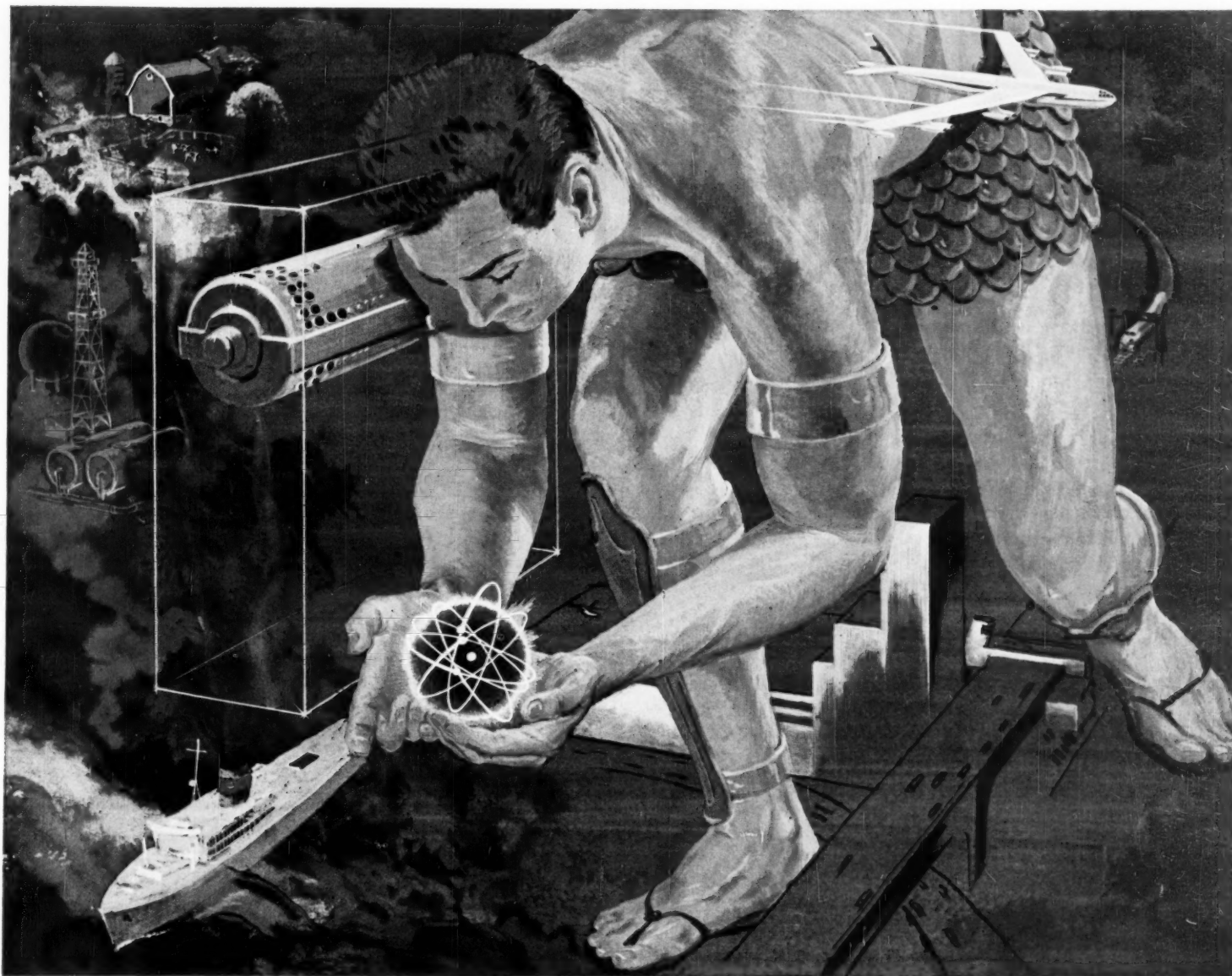
Automatically prints large, legible numbers on file folders, job tickets, time cards, etc., makes for easier reading, faster work. (Provides consecutive, duplicate or repeat numbering.) See your dealer or let us send our catalog—"How to Select a Numbering Machine."

Specify FORCE for the Finest

**WM. A. FORCE**

A COMPANY INCORPORATED  
 216 NICHOLS AVENUE, BROOKLYN 3, N. Y.





## POTENTIAL UNLIMITED

*a giant step in automation for business*

Announcing the Remington Rand  
UNIVAC FILE-COMPUTER... a  
medium-size data-processing system

The speed of electrons... the memory of magnetism... and over fifty years' experience in business records and control... all these have been built into the Univac File-Computer.

Here's building-block flexibility that adapts to practically any situation—an electronic brain with common-language input-output for application after application. Here's machine versatility that can file, find, compute and summarize *simul-*

*taneously*—a medium-size system that can, for example, handle billing, inventory and sales analysis as a single operation.

Here's the truly automatic office *your* top management should know about. For this newest Univac can bring you lower costs, increased production, better customer service and freedom from supervisory routines. Remington Rand will gladly call to show you *how* and *where*.

ROOM 1843, 315 FOURTH AVENUE, NEW YORK 10

**Remington Rand**

PUNCHED-CARD ELECTRONICS

# FH means Forget Hand-folding ...and save!

A lot of people in a lot of offices would be glad to forget hand-folding if they could. It's a boring chore. Wastes many hours of valuable company time.

A Pitney-Bowes model FH office Folding Machine will make everybody happier...and end the waste! The FH is small, portable, takes up little space—and costs less than a standard typewriter! Electrically driven, with semi-automatic feed, it will fold all your form letters, bulletins, statements, mail enclosures, etc...far faster and more accurately. (Automatic feed optional at slight extra cost). The FH can make two folds at once, double-folding up to 5,000 sheets per hour—even folding sheets stapled together.

It makes eight different folds, handles sheets from 3x3 to 8½x14 in a wide range of paper weights and finishes. And it takes only a few seconds to set it for a job. Just move two little knobs to adjust it for the kind of fold you want. Easy as tuning your TV!

For a demonstration in your own office, call the Pitney-Bowes office listed in your 'phone book—or send the coupon for free illustrated booklet.



The FH costs less than a typewriter!



Fully automatic model FM folds up to 19,000 sheets per hour

## PITNEY-BOWES Folding Machines

Made by Pitney-Bowes, Inc.,...originators of the postage meter...94 branch offices, with service in 259 cities in U.S. and Canada.



PITNEY-BOWES, INC.  
1502 Walnut St.,  
Stamford, Conn.

Send free booklet on Folding Machine to:

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

best possible public utilities. It should lay plans for the control of ... residential and school expansion.

### The power of advertising



"We put advertising-merchandising together with a hyphen..."

WALTER R. BARRY

Vice-President, General Mills Inc., before Advertising Federation of America, Chicago, Ill.

Advertising is an indispensable factor in the great structure we call "Business." Granted that advertising requires an amazing number of technical and professional skills, but with us it has always had a powerful influence in deciding what we are going to produce, how much we are going to produce, how we are going to keep our products up-to-date, and add new ones, and, importantly, how we are going to merchandise them. . . .

If there has ever been any line of demarcation in the various segments of our "Life Line" from food in the field to food on the table, we are not aware of it. We put advertising-merchandising together with a hyphen, rather than a conjunction between them, and about as far as we have ever gone in separating one from the other is to say that advertising moves people toward goods, and merchandising moves goods toward people. When collisions occur at the point of sale between these two forces, we call it a consumer purchase.

Naturally we vary the strategy as between products, but the job of communicating news to consumers about products, whether old or new, new services, and new methods, must always go in tandem with having the distributors and the retailers know the full story, and have the products at the right place to back up the "news" in the advertising.

The important function of advertising in carrying news about new applications of products, new ways to use products, new services the products can perform for the consumer, cannot be over-emphasized.

## modern design —



quality materials and fine craftsmanship give Climax Club Smokers a measure of elegance that is instantly recognized by people of discriminating tastes. Styles for every need. Write for the new 1955 catalog and the name of the nearest supplier. Ask for brochure 8-DR.

**Climax**  
CLUB SMOKERS



PULLMAN DeLuxe .....\$89.50\*  
With Tray.....\$98.90\*  
Shipping wt. 32¾ lbs.

**ARNOLT CORPORATION**  
WARSAW, INDIANA, U. S. A.

\*Prices f.o.b. factory

STANLEY DeLuxe.....\$69.50\*  
With Tray.....\$78.90\*  
Shipping wt. 27 lbs.



# "UPSTATE, N.Y."



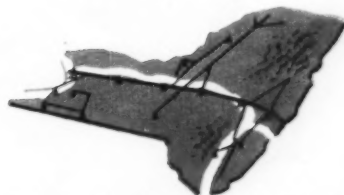
**T**O A BUSINESS that wants to grow:

*Put your new plant or office in "Upstate, N. Y." . . . on the doorstep of the nation's greatest markets.*

For "Upstate, N. Y." . . . from the Hudson River to Niagara Falls . . . is one of the world's leading business and industrial centers.

Its people are mostly highly skilled workers who own their own homes and like to live here. Distribution is fast and cheap because the area is served by major airlines, railroads, the Barge Canal, the magnificent New York State Thruway, and soon, the St. Lawrence Seaway.

Electricity is plentiful and rates are low. Get the complete facts on powerful "Upstate, N. Y." Drop a line to Earle J. Machold, President, Niagara Mohawk Power Corporation, Syracuse, New York.



Highways, railroads, airlines and canals flow through the heart of the Niagara Mohawk system . . . "Upstate, N. Y." At left: The historic Mohawk Valley, part of the "Great Corridor" of trade which extends from the Atlantic Seacoast to the heart of America.

**powered  
by  
NIAGARA  
MOHAWK**

WHAT'S NEW IN MOTOR CONTROL? ★ ★ ★ GET IT FIRST IN CUTLER-HAMMER

Now industry's three-phase motors  
can have full three-phase protection  
with standard in-stock  
motor control!



Many motor users have proved *two* overload relays are inadequate protection for three-phase motors. In fact, widespread motor burn-outs due to inadequate motor protection have caused amendment of Section 4327 of the National Electrical Code. The code now permits authorities to *require* three overload relays in three-phase motor control . . . and this provision is already being enforced in some areas. Many safety experts and power engineers say the time is not far off when three-phase motor control with less than three overload relays will be unacceptable.

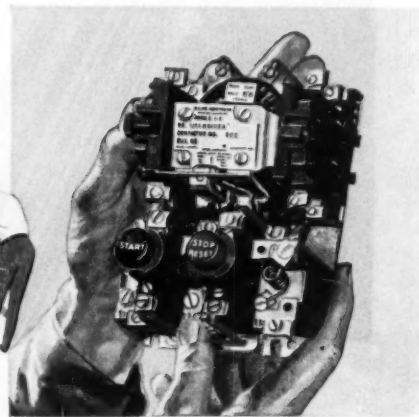
The use of three overload relays is not new. Many industrials plagued by recurring motor burn-outs and the resulting intolerable operating interruptions have changed to three-relay control. But such changeovers have been slow to effect and costly as no standard control was available with three overload relays. Special constructions and enclosures have always been required.

The BIG news today is that this is no longer true. The new Cutler-Hammer ★ ★ ★ Motor Control offers *three* overload relays in all standard starter constructions and enclosures. You pay only for the third relay, nothing additional for special engineering or manufacture. No extras. No delays. It is *in stock* at your nearby Cutler-Hammer Authorized Distributor. Order it today and use it tomorrow. CUTLER-HAMMER, Inc., 1436 St. Paul Avenue, Milwaukee 1, Wisconsin.



For designers of machines  
and special control panels

The unit panel construction of Cutler-Hammer ★ ★ ★ Motor Control makes it easy to incorporate starters with three overload relays. Starters mount in place with only three screws, require no more space than starters with only two overload relays. NEMA Sizes 0, 1 and 2 starters and all parts thereof are now available as components. Also a complete companion line of control relays with quickly interchangeable NC-NO contacts. Be sure you have the latest design data on this advanced equipment. Write or wire today.



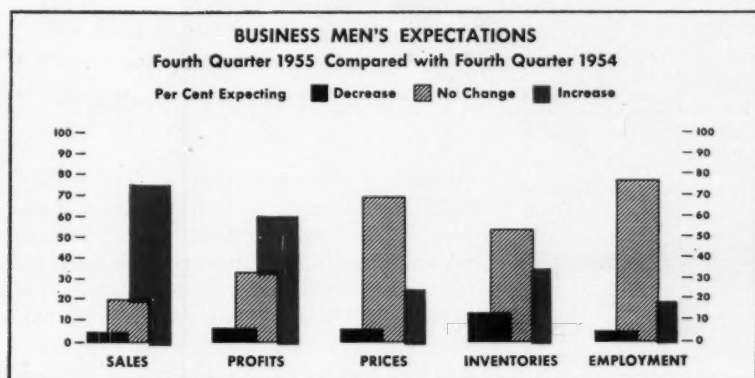


# 1955

## FOURTH QUARTER

### BUSINESS MEN'S EXPECTATIONS

# \$160 BILLION SALES?



Business is looking up for the majority of 1,104 executives interviewed by Dun & Bradstreet. The expectations for the fourth quarter of 1955 reflect optimism in comparison with a year ago. How much optimism and what the survey results imply are particularly important to the forward looking executive.

A DECIDEDLY optimistic outlook for the final three months of 1955 was the consensus of 1,104 business executives across the nation. These representatives of American enterprise foresaw higher sales and greater profits in the last quarter than in the same period a year ago. The majority also expressed the feeling that their selling prices, inventories, and employment would not change appreciably from last year's level when interviewed in June.

If this quarterly survey reflects the direction in which business will move as accurately as have similar surveys over the past eight years, one may expect in the final quarter that: total business sales will be \$160 billion; corporate profits after taxes will reach \$20 billion; the wholesale price level will be about 10 per cent above the 1947-1949 level; business inventories will total about \$80 billion; and nonagricultural employment will be between 55 and 56 million.

There is no assurance that future economic levels will be determined by the current outlook of representative leaders of business. However, there is considerable evidence that the feelings of business men are important in influencing the decisions that will shape the future. When business men expect increased sales, they do things that are designed to produce more sales.

Especially interesting are some of the inferences that may be drawn from the opinions that were expressed in the survey. There is the suggestion that the coming quarter will be a period of higher unit sales, expanding markets, faster turnover of goods, greater production, and increased productivity. These possibilities remain in the realm of inferences, but they can be logically derived from the expressed opinions of the business men interviewed.

The majority of the executives questioned anticipate a higher dollar volume of sales. At the same time, they expect this to occur at a "hold-the-line" price level. If the dollar volume of sales goes up without any change in prices, it is reasonable to assume that it can occur only by increasing the unit volume of sales.

There will be expanding markets as a result of the growing demands of people for more goods. That this is a healthy growth rather than an artificially stimulated one is evident in the combination of higher unit sales, virtually no expectation of a drop in prices, and an optimistic outlook toward profits. This happy combination suggests that business men are looking forward to higher sales from an expanded market rather than from the highly competitive acquisition of a larger share of an unchanged market.

A faster turnover of goods would normally result from higher sales if inventories were held fairly constant. Although the majority expected inventories to remain close to last year's level, there was less unanimity of opinion than in any other line. Perhaps this means that inventory changes will, in the over-all, offset each other. In view of the "no change" in prices, it might also indicate that inventory changes will be an

adjustment to sales and not purely speculative.

Greater production can be the inference drawn from the outlook for higher sales and unchanged inventories. Unless more goods are produced, one could safely assume that any increase in unit sales would necessarily tend to reduce inventories. For comparison, the Federal Reserve Board reported that industrial production during the last quarter of 1954 was 28 per cent above the 1947-1949 level; it's nearly 40 above now.

Productivity is the relation between output and employment and its steady rise has marked the American economy. When greater production is coupled with the outlook for steady employment, the answer appears to be increased productivity. This could mean not only a more intensive use of existing facilities, but also an increase in the capital investment in them.

From these inferences added optimism can be attached to the already optimistic outlook of executives toward sales, profits, prices, inventories, and employment. To look upon them as a forecast can not be entirely justified, but there is reason to suppose that these expectations will affect the actions of business men toward creating a climate that will be conducive to a further economic expansion.

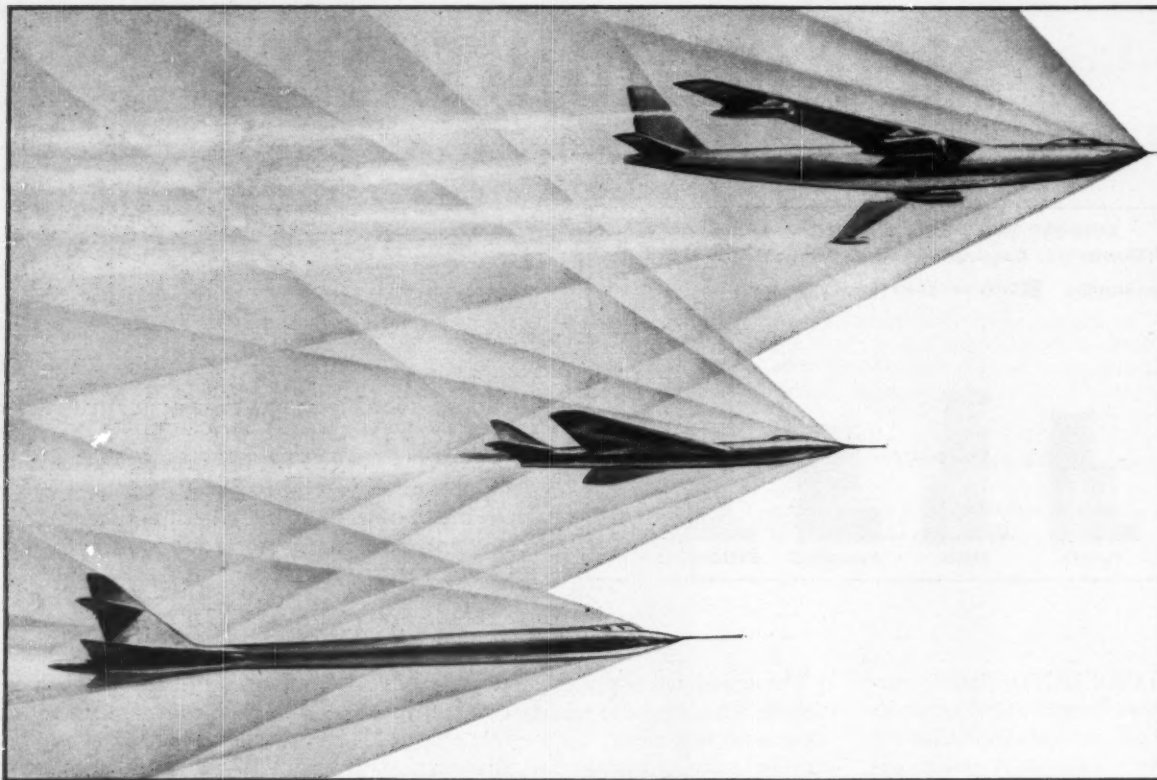
### THE FOURTH QUARTER OUTLOOK

A COMPARISON OF 1955 WITH 1954

#### Percentage Breakdown of Opinions Expressed

	ALL CONCERNS			MANUFACTURERS			WHOLESALESALES			RETAILERS		
	Increase	Unchanged	Decrease	Increase	Unchanged	Decrease	Increase	Unchanged	Decrease	Increase	Unchanged	Decrease
SALES	77	19	4	77	19	4	73	22	5	81	15	4
PROFITS	61	33	6	66	30	4	55	39	6	58	35	7
PRICES	26	69	5	24	72	4	33	61	6	17	76	7
INVENTORIES	35	53	12	37	52	11	30	55	15	38	49	13
EMPLOYMENT	19	77	4	25	71	4	13	83	4	15	82	3

*With Inco Nickel in them . . . metals perform better, longer*



To an artist, the shock waves created by an airspeed of 2100 miles an hour look like this.

## What's beyond the sound barrier?

**More speed — more heat — more reason than ever  
for the aviation industry to plan Inco Nickel into its future**

At sea level, the speed of sound is about 760 miles an hour—Mach 1.

At that airspeed, the surface temperature of an airplane is in the neighborhood of 200 degrees F.

Beyond that?

... look at the picture above. It's an artist's view of the formation of shock waves around planes moving about Mach 2.8—roughly 2100 miles an hour. At that speed, you expect friction-created skin temperatures in the 700-800 degrees F range.

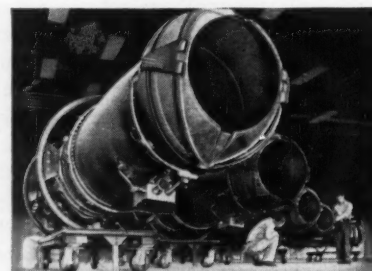
At such temperatures, few materials hold their strength long. So, for years, International Nickel research has been working closely with the aircraft industry on the structural materials problems involved.

Inco-developed "K" Monel is one product of this research cooperation.

Inco-developed Inconel "X" is another.

"K" Monel is now being used successfully at temperatures up to 800 degrees F. And, as authoritative tests prove, Inconel "X" now stands ready to move into the supersonic picture as the most dependable of the metals tested above about 950 degrees F.

**Beyond this? More speed, more heat, more structural materials problems for the aircraft industry and for Inco High Temperature Research.** For more information on the metal on which so much of this research is centered, write for a copy of "The Romance of Nickel." The International Nickel Company, Inc., Dept. 258d, New York 5, N. Y.



**Inco-developed Alloys In Jet "Power Plants," too!** Take the "power plant" of one of the newest jets. Combustion liners are Inconel, after-burner shell Inconel "W". These Inco-developed Alloys supply corrosion resistance, heat resistance, strength and ductility.

©1955, T. I. N. Co.



## International Nickel

*Producer of Nickel, Inco Nickel Alloys, Copper, Cobalt, Tellurium, Selenium and Platinum, Palladium and Other Precious Metals.*



# The Trend of BUSINESS

A N D

# Compass Points Q U A R T E R L Y

- Can Business Keep Booming?
- Is Consumer Credit Too High?
- How Much Higher Can Inventories Go?
- What Lines Are Left out of the Boom?
- Isn't It Really a Profitless Prosperity?

Many business men seem to be worried because there is so little to worry about. Others feel that there is nowhere to go from the cresting boom but downward. But, if one coffee can be "coffee-er," and even one oil is "oily-er," why can't the boom become "boomier"? It would be rather unusual were the expansion in general business to peter out now. Since World War I, the periods of expansion have averaged 34 months, while periods of contraction have been half as long, indicating perhaps the effects of secular growth.

Like a circus tent that covers a startling variety of acts, the broad statistics about the over-all economy cover and obscure many diverse performances by business. There is certainly a minority of business men and employees who feel that the prosperity bandwagon has passed them by as a freight train does a tramp. Here are some of the questions which business men are now asking.

## What is the outlook for general business for the rest of 1955?

Virtually all signals are flashing a bright green for a continuation of the boom in the remaining months of 1955. The demand for steel, which is a good basic barometer of the entire industrial picture, has been so high that most steel producers are booked through the fourth quarter. New orders for paperboard, which are frequently a bellwether of total industrial output, are substantially above a year ago and at near-peak levels.

According to the latest survey of business men's expectations (see page 23), confidence in future business prospects were never higher. Neither construction nor autos—two hefty props for the present boom—give any hint of an unusual dip in the months ahead. Business spending for new plant and equipment is scheduled to hold at peak levels. After completing a survey of 400 manufacturing industries, the Department of Commerce last month concluded that most industries went into the second half of 1955 with enough momentum to bring about new peaks in production and sales for the entire year. The Department of Labor predicted last month that general business will move up to even higher

levels in the Fall with further gains in employment and dips in joblessness.

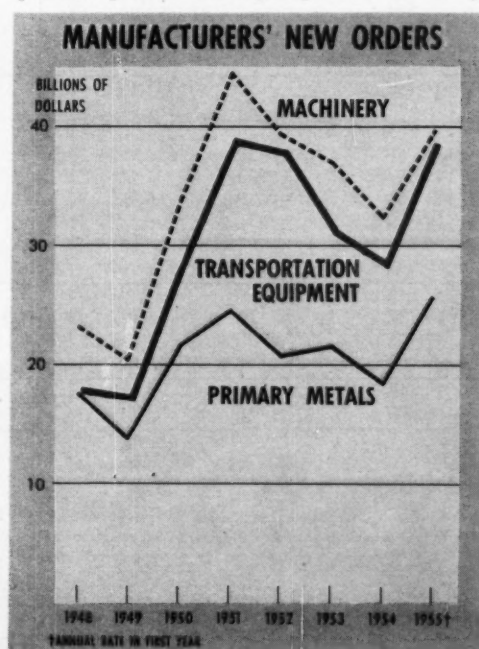
## Where will the boom get its steam in the months ahead?

Among the sectors of the economy providing buoyancy in the months ahead are:

- More personal income from wage hikes, tax cuts, social security increases.
- Rising consumer spending.
- Inventory expansion, which provides an enlarged market for many goods.
- More spending by state and local governments, while Federal spending remains high.

A healthy expansion can be achieved during 1956 if the entire economy grows together—consumer spending, purchasing power, profits, productivity, inventories—without some elements getting out of line. If the whole economy can continue to swell gently, like a slowly expanding balloon, without developing any dangerous blisters, such as runaway prices or inventory gluts, there seems to be little doubt that 1956, an election year incidentally, will see gross national production lifted to another record.

*Shipments of machinery kept pace with new orders in the first half of 1955; backlogs were steady at about four months of current production. In transportation equipment, shipments exceeded new orders and backlogs were reduced to about five months' output, compared with six months early in the year. New orders for primary metals out-paced shipments; backlogs expanded noticeably.*



**It may be true that total business activity is at an all-time high, but what about individual industries?**

Among the industries which are still below previous peak production levels are furniture, electronic instruments, coal, fabricated metals, and machinery. Well above previous peaks is output in the chemicals and petroleum, building materials, primary metals, automobiles, paper, and printing industries.

The production of furniture was off about 8 per cent from the all-time high reached during the first half of 1953. However, unfilled orders in June were double those of a year before and about 10 per cent higher than two years earlier.

Despite many advances in the field, the production of electronic equipment will not reach a new record in 1955. This can be traced to the cutbacks in military orders. During the past few years, more than half of the electronics industry's output has gone to the military, about a third to consumer goods, and about 10 per cent to business and industry. It is this last market which is now growing swiftly to offset the drop in military orders, so that total volume in 1955 will probably approximate \$6.2 billion compared with \$6.3 billion in 1953. Price reductions should spur the buying of color television sets this Fall, while the replacement market for black-and-white TV remains considerable.

The production of fabricated metals—such products as tin cans and tinware, general hardware, stampings, heating apparatus—was off about 7 per cent from the record level in the first half of 1953. Recent gains in order volume point to a moderate rise over 1954 during the last half of the year.

Despite many sizable advances over the year-ago levels, most producers of machinery will probably not chalk up new sales records for 1955. During the first seven months, the production of machinery was off about 10 per cent from the comparable 1953 level, although new orders rose at a rapid rate (chart on this page).

Farm machinery, an industry which declined in recent years, scored substantial sales gains, about 20 per cent, during the first half of 1955.

# 39 COMPASS POINTS OF BUSINESS

## CENSUS

	1 POPULATION Millions	2 NAMES IN REFERENCE BOOK Thousands
1914	99.1	1,655
1919	105.1	1,711
1929	121.8	2,213
1932	124.8	2,077
1939	130.9	2,116
1940	132.0	2,156
1943	136.5	2,027
1944	138.1	1,859
1945	139.6	1,913
1946	141.3	2,146
1947	144.0	2,410
1948	146.6	2,555
1949	149.2	2,684
1950	151.7	2,692
1951	154.4	2,614
1952	157.0	2,643
1953	159.7	2,673
1954	162.4	2,639
'54 I	161.3	2,660
'54 II	162.0	2,641
'54 III	162.7	2,642
'54 IV	163.5	2,644
'55 I	164.2	2,644
'55 II	164.8	2,638

## EMPLOYMENT

	3 EMPLOYMENT Civilian Millions	4 EMPLOYMENT Agricultural Millions	5 EMPLOYMENT Nonagricultural Millions	6 UNEMPLOYMENT Millions
1914	37.6	11.4	26.2	....
1919	42.0	10.5	31.5	...
1929	47.6	10.0	36.3	1.5
1932	38.9	9.7	28.0	12.1
1939	45.8	9.3	35.6	9.5
1940	47.5	9.5	38.0	8.1
1943	54.5	9.1	45.4	1.1
1944	54.0	9.0	45.0	.7
1945	52.8	8.6	44.2	1.0
1946	55.2	8.3	46.9	2.3
1947	58.0	8.3	49.8	2.1
1948	59.4	8.0	51.4	2.1
1949	58.7	8.0	50.7	3.4
1950	60.0	7.5	52.5	3.1
1951	61.0	7.1	54.0	1.9
1952	61.3	6.8	54.5	1.7
1953	61.9	6.5	55.4	1.5
1954	61.2	6.5	54.7	3.2
'54 I	60.0	5.6	54.4	3.5
'54 II	61.3	6.8	54.4	3.3
'54 III	62.1	7.3	54.8	3.2
'54 IV	61.5	6.2	55.3	2.8
'55 I	60.2	5.4	54.9	3.3
'55 II	62.8	7.0	55.8	→ 2.7

## PRICES

	7 CONSUMERS' PRICES Index	8 RETAIL PRICES Index	9 WHOLESALE PRICES Index	10 INDUSTRIAL STOCK PRICE AVERAGES Dollars
1914	42.9	....	43.3	81.03
1919	74.0	....	88.1	99.78
1929	73.3	120.9	61.9	311.24
1932	58.4	....	42.8	64.57
1939	59.4	99.0	50.1	142.66
1940	59.9	100.6	51.1	134.74
1943	74.0	134.0	67.0	134.81
1944	75.2	137.5	67.6	143.32
1945	76.9	141.4	68.8	169.82
1946	83.4	155.2	78.7	191.65
1947	95.5	180.1	96.4	177.58
1948	102.8	192.7	104.4	179.95
1949	101.8	187.7	99.2	179.48
1950	102.8	189.0	103.1	216.31
1951	111.0	206.8	114.8	257.64
1952	113.5	210.4	111.6	270.76
1953	114.4	209.1	110.1	275.96
1954	114.8	208.6	110.2	333.91
'54 I	115.0	208.9	110.3	292.64
'54 II	114.9	208.6	110.3	320.56
'54 III	115.0	209.0	110.3	346.67
'54 IV	114.4	207.6	109.7	375.79
'55 I	114.3	207.4	110.2	405.86
'55 II	114.2	207.7	→ 110.2	→ 428.44

↑ And earnings are at peak levels, too.

↑ pretty stable!

## SALES

	21 FARM RECEIPTS Million dollars	22 EXPORTS Million dollars	23 IMPORTS Million dollars	24 RETAIL SALES Million \$	25 WHOLESALE SALES Million \$	26 MANUFACTURING SALES Million \$
1914	6,039	2,114	1,789	...	...	...
1919	14,570	7,920	3,904	36,549	...	60,509
1929	11,299	5,241	4,399	48,459	37,814	70,262
1932	4,735	1,611	1,323	25,013	...	30,774
1939	8,582	3,177	2,318	42,042	26,244†	61,340
1940	9,056	4,021	2,625	46,375	28,919	70,313
1943	20,003	12,965	3,381	63,235	45,966	153,843
1944	21,153	14,259	3,929	70,208	49,828	165,387
1945	22,125	9,806	4,159	78,304	53,708	154,481
1946	25,336	9,738	4,942	102,488	71,915	151,402
1947	30,020	14,430	5,756	119,604	87,263	191,010
1948	30,464	12,653	7,124	130,521	95,172	211,560
1949	28,129	12,051	6,622	130,721	88,252	196,997
1950	28,611	10,275	8,852	143,689†	103,896	231,415
1951	33,084§	15,030	10,967	158,223	113,168	266,460
1952	32,648	15,177	10,714	164,085	112,325	276,548
1953	31,188	15,698	10,875	170,742	111,990	303,356
1954	30,211	15,059	10,205	170,664	109,291	287,707
'54 I	6,771	3,395	2,501	37,946	25,252	71,332
'54 II	6,058	4,298	2,733	43,228	26,742	72,137
'54 III	7,876	3,549	2,427	42,425	28,608	70,615
'54 IV	9,506	3,817	2,544	47,068	28,689	73,623
'55 I	6,440	3,740	2,738	40,745	26,838	75,220
'55 II	→ 5,873	3,920	2,813	→ 46,678	27,972	79,512

↑ Record harvests forecast

## Sources of the Statistical Data

**CENSUS** 1. POPULATION: U. S. Bureau of the Census—2. NAMES IN REFERENCE BOOK: Dun & Bradstreet, Inc.

**EMPLOYMENT** 3. CIVILIAN EMPLOYMENT, 4. AGRICULTURAL EMPLOYMENT, 5. NONAGRICULTURAL EMPLOYMENT, 6. UNEMPLOYMENT: U. S. Bureau of the Census.

## INVENTORIES

	27 RETAIL INVENTORIES Million \$	28 WHOLESALE INVENTORIES Million \$	29 MANUFACTURING INVENTORIES Million \$
1914	...	...	...
1919	...	...	12,906
1929	7,298	4,024	12,775
1932	...	2,307	7,332
1939	5,285	3,075†	11,516
1940	5,819	3,255	12,873
1943	7,065	3,759	20,171
1944	7,105	3,969	19,578
1945	7,442	4,625	18,457
1946	11,231	6,606	24,620
1947	13,372	7,613	29,032
1948	15,190	7,982	31,782
1949	14,570	7,913§	29,038
1950	18,699§	10,474	34,534§
1951	19,904	11,068	43,123
1952	20,234	11,310	44,442
1953	21,208	11,695	46,947
1954	22,090	11,562	44,017
'54 I	23,321	11,843	45,959
'54 II	22,131	11,488	44,684
'54 III	22,498	11,752	43,236
'54 IV	22,090	11,562	44,017
'55 I	23,520	11,622	43,483
'55 II	→ 23,400	11,600	43,500

↑ Higher than last year, but look at sales!

**PRICES** 7. CONSUMERS' PRICES: U. S. Bureau of Labor Statistics—8. RETAIL PRICES: U. S. Office of Business Economics—9. WHOLESALE PRICES: U. S. Bureau of Labor Statistics—10. INDUSTRIAL STOCK PRICE AVERAGES: Dow-Jones & Company.

**INCOME** 11. WEEKLY HOURS, 12. WEEKLY EARNINGS OF INDUSTRIAL WORKERS: U. S. Bureau of Labor Statistics—13. DISPOSABLE PERSONAL INCOME: U. S. Office of Business Economics—14. DISPOSABLE INCOME PER CAPITA, 1954 Dollars:

Compiled by dividing Series 13 by the items in Series 1 and adjusting for changes in Series 7—15. CORPORATE PROFITS AFTER TAXES: U. S. Office of Business Economics.

**PRODUCTION** 16. INDUSTRIAL PRODUCTION (PHYSICAL): Federal Reserve Board—17. ELECTRIC POWER PRODUCTION: Federal Power Commission—18. BUILDING PERMITS, 120 CITIES: Dun & Bradstreet, Inc.—19. EXPENDITURES FOR PLANT AND EQUIPMENT: U. S. Department of Commerce and Securities



# a record of business activity

## INCOME

11 WEEKLY HOURS Indust. Workers Hours	12 WEEKLY EARNINGS Indust. Workers Dollars	13 DISPOSABLE PERSONAL INCOME Billion Dollars	14 DISPOSABLE INCOME Per Capita 1954 Dollars	15 CORPORATE PROFITS AFTER TAXES Billion dollars
49.4	11.01	33.2	894	1.9
46.3	22.08	63.5	934	5.7
44.2	25.03	83.1§	1,069§	8.3§
38.3	17.05†	48.7	766	-3.4
37.7	23.86	70.4	1,041	5.0
38.1	25.20	76.1	1,106	6.5
44.9	43.14	133.5	1,517	10.5
45.2	46.08	146.8	1,618	10.4
43.4	44.39	150.4	1,607	8.3
40.4	43.82	159.2	1,551	13.4
40.4	49.97	169.0	1,412	18.2
40.1	54.14	187.6	1,429	20.3
39.2	54.92	188.2	1,422	15.8
40.5	59.33	206.1	1,518	22.1
40.7	64.77	226.1	1,515	18.7
40.7	67.97	236.7	1,524	16.1
40.5	71.69	250.4	1,573	17.0
39.7	71.65	254.8	1,569	17.0
39.5	70.97	253.1•	1,566•	16.3•
39.3	70.87	253.9•	1,566•	16.8•
39.6	71.28	254.5•	1,561•	16.7•
40.3	73.30	257.8•	1,581•	17.9•
40.4	74.67	261.0•	1,596•	20.4•
40.6	75.73	270.4•	→1,649•	20.7•

## PRODUCTION

16 INDUSTRIAL PRODUCTION (PHYSICAL) Index	17 ELECTRIC POWER PRODUCTION Billions kWh	18 BUILDING PERMITS 120 Cities Million \$	19 EXPENDITURES FOR PLANT & EQUIPMENT Billion dollars	20 GROSS NATIONAL PRODUCT Billion dollars
33	...	735	...	38.5
39	...	1,181	...	77.9
59	116.7	2,490	9.2	104.4§
31	99.4	336	2.6	58.5
58	161.3	1,029	5.5	91.1
67	179.9	1,104	6.5	100.6
127	267.5	419	4.5	192.5
125	279.5	709	5.2	211.4
107	271.3	1,028	8.7	213.6
90	269.6	2,089	14.8	209.2
100	307.4	2,470	20.6	232.2
104	336.8	3,111	22.1	257.3
97	345.6	3,131	19.3	257.3
112	388.7	4,466	20.6	285.1
120	432.3	3,654	25.6	328.2
124	463.1	3,523	26.5	345.2
134	516.5	4,034	28.4	364.5
125	544.6	4,143	26.8	360.5
124*	131.5	948	6.3	358.3•
124*	131.4	1,119	6.9	357.6•
123*	138.7	1,084	6.6	358.8•
128*	143.1	992	7.0	367.1•
133*	147.8	1,157	5.8	375.3•
→138*	149.3	→1,363	7.3	→383.0•

1914  
1919  
1929  
1932  
1939  
1940  
1943  
1944  
1945  
1946  
1947  
1948  
1949  
1950  
1951  
1952  
1953  
1954  
I  
II  
III  
IV  
I  
II

↑ all-time peak

↑ Permits run 2 or 3 months ahead of actual construction.

## FEDERAL

30 FEDERAL RECEIPTS Million dollars	31 FEDERAL EXPENDITURES Million dollars	32 GROSS FEDERAL DEBT Billion dollars
735	735	1.2
5,152	18,515	25.5
4,033	3,299	16.9
2,006	4,535	19.5
5,103‡	8,966‡	40.4
5,265	9,183	43.0
22,202	79,622	136.7
43,892	95,315	201.0
44,762	98,703	258.7
40,027	60,703	269.4
40,043	39,289	258.3
42,211	33,791	252.3
38,246	40,057	252.8
37,045	40,167	257.4
48,142	44,633	255.2
62,129	66,145	259.1
65,218	74,607	266.1
70,216	64,851	274.4
24,638	15,480	273.3
20,340	17,807	271.9
13,229	16,577	273.6
12,009	14,987	278.8
21,876	15,667	274.0
22,460	16,484	274.4

## FINANCE

33 CONSUMER CREDIT Outstanding Billion dollars	34 LOANS OF COMMERCIAL BANKS Billion dollars	35 CURRENCY OUTSIDE OF BANKS Million \$	36 DEMAND DEPOSITS ADJUSTED Million \$	37 INTEREST ON BUSINESS LOANS Per cent
...	13.2	1,533	10,082	...
...	22.4	3,593	17,624	6.58
6.4	35.7	3,557	22,809	5.83
3.6	21.8	4,669	15,728	4.71
7.2	17.2	6,401	29,793	2.10
8.4	18.8	7,325	34,945	2.10
4.9	19.1	18,837	60,803	2.60
5.1	21.6	23,505	66,930	2.40
5.7	26.1	26,490	75,851	2.20
8.4	31.1	26,730	83,314	2.10
11.6	38.1	26,476	87,121	2.10
14.4	42.5	26,079	85,520	2.50
17.1	43.0	25,415	85,750	2.70
20.8	52.2	25,398	92,272	2.70
21.5	57.7	26,315	98,234	3.10
25.8	64.3	27,494	101,500	3.50
28.9	68.3	28,091	103,300	3.69
28.5	71.2	27,400	106,900	3.61
28.2	67.1	26,900	96,700	3.72
28.4	67.3	27,093	98,132	3.60
28.8	67.2	26,900	101,200	3.56
29.4	71.2	27,400	106,900	3.55
29.9	72.3	26,800	102,400	3.54
→31.8	→73.0	26,700	104,500	3.50

## FAILURES

38 BUSINESS FAILURES Number	39 LIABILITIES OF FAILURE Million \$
18,280	357.9
6,451	113.3
22,909	483.3
31,822	928.3
14,768	182.5
13,619	166.7
3,221	45.3
1,222	31.7
810	30.2
1,130	67.3
3,476	204.6
3,252	234.6
9,246	308.1
9,162	248.3
8,058	259.4
7,611	283.3
8,862	394.2
11,086	462.6
2,895	134.6
2,883	122.6
2,587	101.2
2,721	104.2
2,854	121.1
2,772	→107.3

1914  
1919  
1929  
1932  
1939  
1940  
1943  
1944  
1945  
1946  
1947  
1948  
1949  
1950  
1951  
1952  
1953  
1954  
I  
II  
III  
IV  
I  
II

↑ Growth tops any first half year since the end of world war II

↑ Fewer big failures

& Exchange Commission—20. GROSS NATIONAL PRODUCT: U. S. Office of Business Economics

SALES 21. FARM INCOME: U. S. Bureau of Agricultural Economics—22. EXPORTS, 23. IMPORTS: U. S. Bureau of the Census—24. RETAIL SALES, 25. WHOLESALE SALES, 26. MANUFACTURING SALES: U. S. Office of Business Economics.

INVENTORIES 27. RETAIL, 28. WHOLESALE, 29. MANUFACTURING: U. S. Office of Business Economics.

FEDERAL 30. FEDERAL RECEIPTS, 31. FEDERAL EXPENDITURES, 32. GROSS FEDERAL DEBT: U. S. Treasury Department.

FINANCE 33. CONSUMER CREDIT, 34. LOANS OF COMMERCIAL BANKS, 35. CURRENCY OUTSIDE OF BANKS, 36. DEMAND DEPOSITS ADJUSTED, 37. COMMERCIAL LOAN RATES: Federal Reserve Board.

FAILURES 38. BUSINESS FAILURES, 39. LIABILITIES OF FAILURES: Dun & Bradstreet, Inc.

## Footnotes

†Figures for this and prior dates are from another source and are not strictly comparable with later data.

‡Beginning in 1937 tax refunds are deducted from receipts and are not included among expenditures.

\*Annual rate seasonally adjusted.

§Quarterly figures seasonally adjusted.

¶Series revised from this date.

→Quarterly figures that are significant either for their change or their lack of change from previous levels. Second quarter figures for most series are based upon preliminary estimates and incomplete data.

## Regional Highlights . . .

● Building permit values, which tend to precede by two or three months the actual volume of construction, were higher than a year ago in all regions in June. In New York City, building plans filed were almost four times as large as in 1954, reflecting several large housing projects, office buildings, and the "Palace of Progress" to be erected on the site of the Pennsylvania Railroad terminal at a cost of over \$50 million. The smallest regional increase from a year ago occurred in the South Atlantic states, where the volume of permits granted was less than 1 per cent above the 1954 level. The largest increase was in the Middle Atlantic states, twice as high as a year ago.

● While business failures in June were fewer than a year ago in six of nine geographic regions, they increased 50 per cent in New England, 33 per cent in the West North Central states, and 5 per cent in the East North Central.

● New business incorporations in the first half of 1955 were more numerous than in the comparable period of 1954, with gains ranging from 19 per cent in the New England and Middle Atlantic states to 47 per cent in the Mountain and Pacific states.

Among the factors which have induced farmers to loosen their purse-strings while their total incomes are still slipping, are the rising cost of farm labor, improved models, and a total 1955 crop which is second in size only to that of 1948. During the second half of 1955, farm machinery makers expect to sell about 10 per cent more than a year ago.

Producers of construction equipment expect to sell about \$1.8 billion this year, 50 per cent more than in 1954. The sales of office equipment have been about 10 per cent above last year so far in 1955 and this gain is expected to hold during the next few months.

*Reflecting the unprecedented levels of employment and income, retail sales maintained a comfortable increase over a year ago. There were impressive gains in sales of motor vehicles, furniture, and appliances. The enthusiastic use of consumer credit helped to encourage buying; consumers' short-term debts, at more than 11 per cent of their spendable incomes, were only slightly more burdensome than a year ago. The regional estimates are based on spot reports from 140 scattered Dun & Bradstreet offices.*

Manufacturers of electrical equipment have a rosier outlook than at any time during the past year and a half. New orders have been surpassing the year-ago level. However, current output is at the annual rate of about \$4.5 billion, up 12 per cent from 1953, but down about 5 per cent from the record set last year.

The demand for steel was apparently not dampened by the recent price hikes. The output of steel, like automobiles, held at a high level in July, confounding many observers who expected sizable seasonal slides. With many steel mills booked through the fourth quarter, a new record level of steel production of more than

112 million tons for the year seems assured.

How does the present boom compare with that of early 1953? Are the same weaknesses present now which led to the dip in the third quarter of 1953?

One of the most obvious contrasts between 1953 and 1955 is the much more comfortable inventory situation at the present time (compare Compass Points 27, 28, and 29 with 24, 25, and 26). The prosperity in the first half of 1953 depended much more on Federal spending than it does now. About 16 per cent of GNP could be traced directly to Federal spending then, against about 11 per cent at the present time. The economy in 1953 faced substantial cutbacks in Federal spending, which is now on an even keel, while state and local spending is rising.

Ambitious programs for new highways, schools, and slum clearance are much closer to reality now, indicating further sustaining forces soon to come. There has been a significant rise of about \$14 billion in disposable personal income (Compass Point 13) during the past two years while prices have remained torpid. Business expenditures for new plant and equipment are still rising, while they were falling off at the height of the 1953 boom. While the money market has tightened somewhat in recent months, it is still much less stringent than during the second quarter of 1953. For these and other reasons, most economists and other business observers can see little in the present situation which might bring a repetition of the 1953-1954 dip within the near future.

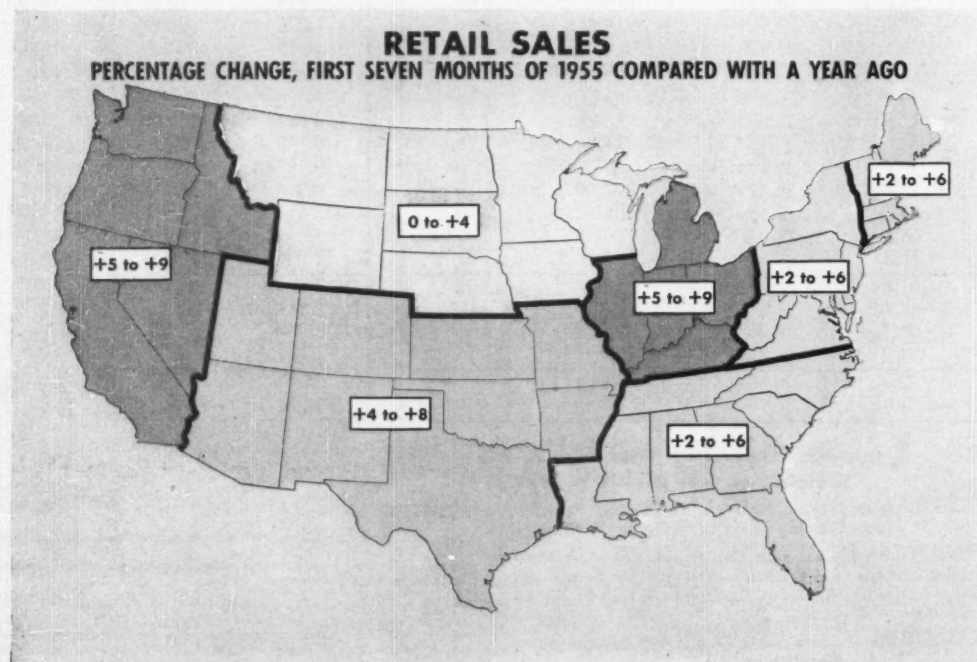
However, gains in gross national product have not quite kept pace with the rising population (Compass Point 1). On a per capita basis, GNP is still 1 per cent short of the 1953 peak and industrial production is down about 3 per cent, indicating perhaps that there is still room for improvement in the months ahead.

Inventories were the villain in the 1953-1954 recession. Where do they stand now and how much higher can they go before they topple us into another recession?

Of course, inventory slashing was not alone responsible for the 1953-1954 decline in business activity, which revised data now indicate was much less severe than was thought at the time. Gross national product dipped only 1 per cent in 1954 rather than the previous estimate of 3 per cent.

The substantial cutbacks in defense spending after the end of the Korean clash in July 1953 probably contributed more to the decline than did inventory reduction. Nevertheless, it is true that stock-sales ratios were very high during the third quarter of 1953 when the slide began.

Manufacturers' stocks were 85 per cent higher than sales in August 1953, after climbing from a level 75 per cent above sales in March 1953. In July 1955 stocks were most likely 63 per cent higher than sales. The last official figures, for early June, showed stocks of manufacturers as 64 per cent above sales. So it would appear that there is a comfortable gap between the present





# ORE . . . enriched by man

## Extends Nation's Iron Reserves for Generations to Come!

Going, going . . . almost gone are many of the great deposits of ready-to-use iron ore that have fed U. S. steel mills for almost a century.

But from vast reserves of TACONITE rock — long considered too low in iron content to be worth using — a new and rich blast furnace feed is being made.

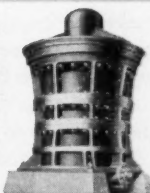
First, flint-hard taconite is crushed and ground to powder. Magnets separate iron-rich particles from the waste. These particles then must be combined into a hard, usable form. Allis-Chalmers has pioneered several methods of accomplishing this. One of these — the nodulizing method — uses the rotary kiln shown here.

The white heat of this kiln produces nodules of 65% iron content—a far richer, better furnace feed than the best shipping grade ores from the Mesabi iron range!

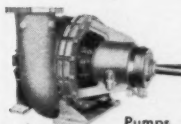


### Allis-Chalmers Machinery Plays a Part

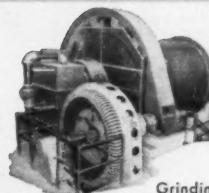
The world's largest gyratory crusher was built by Allis-Chalmers for taconite reduction. Allis-Chalmers grinding mills, screens, pumps, motors and electric power equipment are all used in the process. For facts about A-C equipment, call the A-C representative in your area, or write Allis-Chalmers, Milwaukee 1, Wisconsin.



Crushers



Pumps



Grinding Mills



Switchgear



A-4690

# ALLIS-CHALMERS

now...

erase errors  
magnetically  
as you **DICTATE**

with the new  
**Comptometer® magnetic**  
dictation machine

Here is the greatest improvement in dictation's 68 year history! Dictate as easy as talking. Make an error—reword a phrase? It's no problem. Simply backspace and re-dictate the new or correct thought. It is recorded as the old erases itself, magnetically. You'll hand your secretary perfect dictation she will transcribe faster and better. Only magnetic dictation gives you this new freedom and simplicity.

#### RE-USABLE BELTS NEVER WEAR OUT!

Comptometer's Erase-O-Matic belts, made from miracle Mylar®, can be re-used thousands of times—a tremendous economy. They renew themselves, magnetically, in just three seconds, without removing from machine.



#### HI-FI VOICE REPRODUCTION

Comptometer's magnetic dictation means high fidelity—true, authentic reproduction of your voice, making it easier to understand for faster, more perfect transcription.



\*DU PONT'S TRADEMARK FOR ITS POLYESTER FILM  
The new Comptometer Dictation-Transcription Machine, the world famous Comptometer Adding-Calculating Machine, and the new Comptograph 10-key Calculating Adding Machine are products of Felt & Tarrant Mfg. Co., Chicago 22, Ill.

#### DICTIONATION'S GREATEST TRIUMPH!

			<b>TODAY</b> The amazing Comptometer Erase-O-Matic belt. Never wears out, can be used indefinitely, errors can be erased magnetically.
<b>1887</b> First dictation with fragile wax cylinders.	<b>1939</b> First use of records—costly, breakable.	<b>1948</b> First flexible plastic belt—only one use.	

YOU ARE INVITED TO TRY THIS YEARS-AHEAD COMPTOMETER IN A FREE OFFICE TRIAL OR DEMONSTRATION

Comptometer Dictation Division  
Felt & Tarrant Mfg. Co.  
1722 Marshfield St., Chicago 22, Illinois

Gentlemen: Without any cost or obligation please arrange:

- ☐ FREE DEMONSTRATION  
☐ FREE 10 DAY TRIAL  
☐ Send complete information

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ COUNTY \_\_\_\_\_ STATE \_\_\_\_\_



ratio of 1.63 and the high ratio of 1.85 at the start of the 1953-1954 pause. Even the ratio of 1.85 was not unduly high in itself. Before the defense cutbacks, this stock-sales ratio of manufacturers had reached 2.01 (July 1952) without causing manufacturers to reduce their own commitments sharply.

While the general level of business is rising, there is much less apprehension about the size of stocks on hand. Consequently, manufacturers' inventories could be increased considerably from the present level, which is the lowest in at least three and a half years, supplying an expanded market for many goods.

The story is much the same for retail inventories, which were probably 49 per cent above sales in July. In the prior month, the stock-sales ratio had been 1.50, compared with 1.64 in September 1953. It had taken seven months for the ratio to rise from 1.50 to 1.64 in 1953. The stock-sales ratio for wholesalers reached a high point of 1.32 in August 1953, with which the present ratio of 1.20 compares quite favorably.

#### What about the markets for autos and construction, the two props to the boom?

Various market studies indicate that there will be an active market for about 5 million new cars a year in the next five years. If the present production pace holds, it is certain that the previous record of 6.2 million cars produced in 1950 will fall this year. By the end of July, the auto-makers had already produced about 5 million cars.

How deeply this will cut into future demand is indeed problematical, for future demand itself has to be revised upward as record automobile production helps to lift other industries, thus boosting total purchasing power. The new labor contracts granted by the auto-makers, along with their gargantuan plans for plant expansion, would seem to be a decisive vote of confidence in future demand by those closest to the problem. The rising population and upward shifts in income have opened, for the auto-makers, new market vistas, such as the second family car.

So far this year, new homes have been produced at the annual rate of 1.3 million. While few observers expect this near-record level to hold next year, it is noteworthy that

among the several searching studies of the housing market in the past few months, not one expects less than 1 million new homes to be built each year until the end of the decade.

#### With the severity of competition and rising costs, isn't it really profitless prosperity?

Not quite. From preliminary information now available, it seems likely that total corporate profits, before taxes, for the first half of 1955 will be second only to the record reached in 1951. During the first quarter, such profits were at the annual rate of \$40 billion, compared with \$41.2 in 1951, and were outpacing the year-ago total by 16 per cent.

Corporate profits after taxes probably moved upward slightly in the second quarter from the level of \$20.4 billion in the first, which was the highest for any quarter in the past four years.

#### What about the consumer? Hasn't he mortgaged away his future buying power? Is consumer credit dangerously high?

There is no definitive answer to this puzzler, but there are a number of clues. Collection agencies throughout the country report a general increase in the number of accounts requiring special attention, according to the American Collectors' Association. Total consumer debts—mortgages, installments, loans, and charge accounts—are a somewhat larger proportion of total disposable income than in 1939: 42 per cent against 34 per cent. However, the distribution of income and debt has undergone sweeping changes during the past fifteen years.

About 57 per cent of all spending units, mostly families, have no installment debt whatsoever. It is largely the level of this type of indebtedness which determines the ability of the mass market to absorb new cars, household goods, and other merchandise.

Of consumers with short-term debt, about one-third have more than enough liquid assets to cover the debt. Another third have less liquid assets than debt, while the remainder is completely lacking in liquid asset holdings.

And there are still large untapped markets for many goods. In the rich consumer market made up of families with incomes between



\$5,000 and \$7,500, one-third have no installment debt, while 48 per cent of those with incomes over \$7,500 have no installment debt.

Only about one of every ten families has to set aside 20 per cent or more of income to pay off installment debts, the same proportion of families as in recent years.

Other data indicate how deeply families are in debt: 12 per cent of all families with incomes under \$3,000 and no liquid assets have short-term debts of more than \$500. Some 34 per cent of families with incomes between \$3,000 and \$5,000 and no liquid assets have short-

### What will be the effects of the adoption of a Guaranteed Wage principle in industry?

At the moment, it is of course uncertain how far the practise will spread, but most observers look for these trends if GAW does become widespread:

- Higher expenditures for labor-saving machinery.
- A reduction in capital expansion with more funds channeled into consumption.
- Less mobility of the labor force.
- More overtime work as employers become reluctant to increase

## The Experts Say . . .

The **TEXTILE AND CLOTHING** trades are now sharing in the surge toward new production and consumer spending peaks. While retail sales of women's and children's clothing have run 3 per cent ahead of a year ago, and sales of men's and boys' clothing rose 2 per cent, the real momentum of the rise in consumer spending for textiles and apparel will probably be reached in the Fall.—*The Wool Bureau, Inc.*

The extremely high levels reported in the first half of 1955 indicate that **CONSTRUCTION** activity in the second half of the year will remain very high and that the year will almost certainly establish a new record for construction put in place.—*Dr. G. C. Smith, Economist, F. W. Dodge Corporation.*

The demand for **HOUSING** continues strong and is absorbing the near-record number of dwelling units being built this year. The current vacancy rate (2.2 per cent) is low enough to dispel recent apprehensions about overbuilding at this time.—*Sinclair Weeks, Secretary, U. S. Department of Commerce.*

Total **MAJOR APPLIANCE** sales will top 15 million units this year and nearly match the 1953 record year.—*Judson S. Sayre, President, Norge Division of Borg-Warner Corp.*

term debts of over \$500. Of those with incomes over \$5,000 and no liquid assets, 41 per cent owed more than \$500.

**Are failures at a level which might tend to discourage the formation of new businesses?**

Apparently not. New businesses have been appearing at a faster rate than ever before. During June, there were 12,605 new business incorporations, the highest total for any June on record and a gain of 29 per cent over the year-ago level.

For the first half of 1955, there were 74,357 new corporations started, a gain of 4 per cent over the previous peak in the first half of 1946. It is usual that the majority of failures occur among businesses in the first five years of their operation.

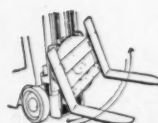
their liabilities.

- More credit buying as workers feel more secure in their jobs.
- Higher production costs.

### What about the Summer lull?

Preliminary information from DUN & BRADSTREET reporters in 60 cities in 39 states pointed to further improvement in many sectors of the economy during July. Employment probably edged upward slightly from the record level of 64 million in the previous month, while unemployment dipped to 2.5 million. Retail trade slipped seasonally but continued to top the level of a year ago, thus setting a new record for the month. Despite seasonal slips, manufacturers' new orders and wholesale trade lost none of the vigor of recent months.

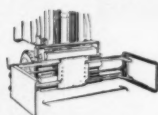
# HANDLE ANY SHAPE LOAD... STACK IT IN ANY POSITION



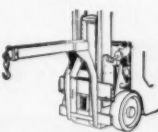
ROTATES 360°



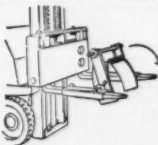
TAKES OR LEAVES PALLETS



CLAMPS LONG LOADS



HANDLES BULKY OBJECTS



TILTS 135° FORWARD

**GAS or ELECTRIC TRUCKS** can now cut handling costs even more by the use of special attachments.

Many materials of sizes, shapes and forms not lending themselves to ordinary forks can readily be lifted, transported, tiered or positioned with specialized attachments that either replace or are interchangeable with forks furnished as standard equipment.

Clamps, scoops, dumping shovels, crane booms, fork shifters, rotating and tilting devices are among the many Baker attachments now available to increase a fork truck's utility.

There are special attachments for efficient handling of crated appliances, cylinders, drums, paper rolls, bales, car wheels, iron pigs. In short, you can now handle practically any load, lift it, carry it, rotate it, tilt it and place or stack it in any position.

**THE BAKER-  
RAULANG CO.**

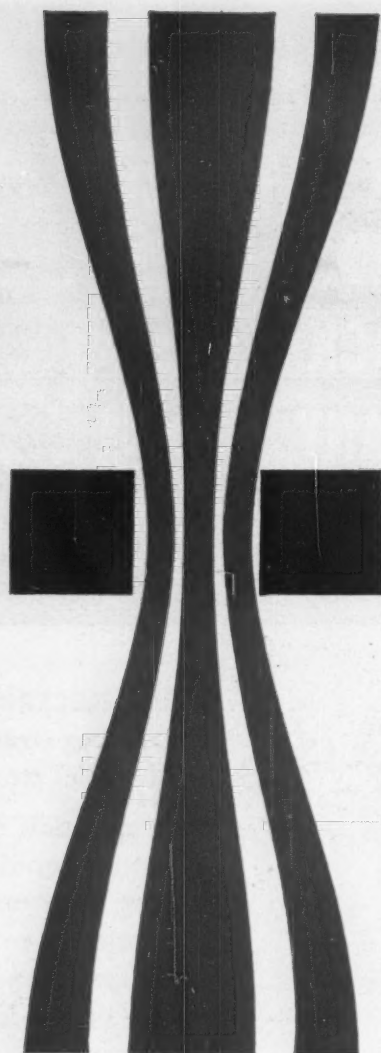
1205 WEST 80TH ST.  
CLEVELAND 2, OHIO

A SUBSIDIARY OF OTIS ELEVATOR COMPANY

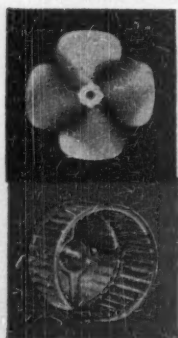
**Baker**

handling equipment

584



No air-moving appliance can be  
—better than the most vital component:  
the air impeller. And no one  
has had more experience in the  
design and manufacture of air impellers  
than Torrington.



THE  
**TORRINGTON**  
MANUFACTURING COMPANY  
TORRINGTON, CONNECTICUT  
VAN NUYS, CALIFORNIA • OAKVILLE, ONTARIO

## Business Failures . . .

At 914 in June, business failures were 4 per cent fewer than in May. While this downturn followed the usual seasonal pattern, casualties were also below the year-ago level. Failures were 5 per cent less numerous than in June 1954, when they were at 965, a post-war high for the month. Total failures in the first half of 1955 amounted to 5,626, some 3 per cent less than in the similar period of 1954; they were 31 per cent more numerous than in 1953.

Reflecting the mortality rate for each 10,000 businesses listed in the *DUN & BRADSTREET Reference Book*, DUN's FAILURE INDEX declined to 41 in June from 43 a year ago. Business failed at a much lower rate than in pre-war 1940 when the Index was at 64.

The liabilities involved in the June failures edged up to \$36,667,000, the largest volume since March. The rise was concentrated among failures with liabilities larger than \$100,000; there was a slight upturn among small casualties with liabilities less than \$5,000.

Failures among concerns with medium-sized liabilities were fewer than in both the previous month

and a year ago. In contrast, failures involving less than \$5,000 were 43 per cent more numerous than in June 1954, and those involving more than \$100,000 were about the same as a year ago.

Businesses in their first five years of operation accounted for 56 per cent of June failures. Some 19 per cent were started in 1954.

Except for manufacturing, where the toll was the second highest for the year so far, June failures were fewer than a month ago in all major industry groups. Food manufacturing, with twice as many failures as in May, was primarily responsible for the manufacturing rise, along with the textiles-apparel industry. Wholesaling casualties, notably in the food trade, fell to the lowest level in a year and a half.

Nearly all manufacturing industries had fewer casualties than a year ago; the sharpest drop occurred among leather manufacturers who had only one-third as many failures as in the previous June.

The decline from a month ago in June failures was concentrated in three geographic regions: the New England, East North Central, and Pacific states.

### FAILURES BY DIVISIONS OF INDUSTRY

(Current liabilities in millions of dollars)	Number 6 Months 1955	Liabilities 6 Months 1954	Number 6 Months 1955	Liabilities 6 Months 1954
MINING, MANUFACTURING	1130	1205	88.1	104.5
Mining—Coal, Oil, Misc.	33	32	2.8	6.3
Food and Kindred Products	87	90	7.8	10.3
Textile Products, Apparel	250	297	12.3	17.4
Lumber, Lumber Products	163	176	7.1	8.8
Paper, Printing, Publishing	53	67	2.4	6.4
Chemicals, Allied Products	26	43	2.4	3.4
Leather, Leather Products	43	56	2.4	3.2
Stone, Clay, Glass Products	26	32	1.3	1.0
Iron, Steel, and Products	71	61	8.7	7.2
Machinery	150	150	23.0	27.3
Transportation Equipment	24	30	2.3	3.6
Miscellaneous	204	171	15.4	9.7
WHOLESALE TRADE	596	551	23.7	26.8
Food and Farm Products	142	144	6.3	6.5
Apparel	32	21	1.1	0.5
Dry Goods	23	37	0.8	1.8
Lumber, Bldg. Mats, Hdwre	67	52	3.7	2.8
Chemicals and Drugs	17	24	0.5	0.6
Motor Vehicles, Equipment	36	26	0.8	0.8
Miscellaneous	279	247	10.4	13.8
RETAIL TRADE	2,817	2,900	61.8	81.9
Food and Liquor	539	512	9.1	7.3
General Merchandise	95	96	3.6	4.4
Apparel and Accessories	463	459	8.5	9.4
Furniture, Furnishings	427	519	12.2	28.9
Lumber, Bldg. Mats, Hdwre	160	166	4.4	4.7
Automotive Group	252	301	5.7	11.2
Eating, Drinking Places	504	489	11.1	9.1
Drug Stores	70	86	1.6	1.7
Miscellaneous	307	272	5.6	5.3
CONSTRUCTION	649	673	37.2	26.4
General Bldg. Contractors	209	233	20.4	12.3
Building Subcontractors	404	406	14.8	12.4
Other Contractors	36	34	2.0	1.7
COMMERCIAL SERVICE	434	449	17.8	17.6
TOTAL UNITED STATES	5,626	5,778	228.5	257.3

Liabilities are rounded to the nearest million; they do not necessarily add to totals.

### THE FAILURE RECORD

	June 1955	May 1955	June 1954	P.C. Chg.†
DUN'S FAILURE INDEX*				
Unadjusted	40.2	43.7	42.5	—5
Adjusted, seasonally	40.6	41.6	42.9	—5
NUMBER OF FAILURES	914	955	965	—5
NUMBER BY SIZE OF DEBT				
Under \$5,000	170	163	119	+43
\$5,000—\$25,000	420	484	497	—15
\$25,000—\$100,000	241	253	268	—10
\$100,000 and over	83	55	81	+2
NUMBER BY INDUSTRY GROUPS				
Manufacturing	200	168	208	—4
Wholesale Trade	79	87	89	—11
Retail Trade	446	499	455	—2
Construction	114	121	132	—14
Commercial Service	75	80	81	—7
(LIABILITIES in thousands)				
CURRENT	\$36,667	\$34,714	\$41,613	—12
TOTAL	37,171	34,840	41,613	—11

\*Apparent annual failures per 10,000 listed enterprises, formerly called DUN'S INSOLVENCY INDEX.  
†Per cent change, June 1955 from June 1954.

BUSINESS FAILURES include those businesses that ceased operations following assignment or bankruptcy; ceased with loss to creditors after such actions as execution, foreclosure, or attachment; voluntarily withdrew leaving unpaid obligations; were involved in court actions such as receivership, reorganization, or arrangement; or voluntarily compromised with creditors out of court.

CURRENT LIABILITIES, as used in the Failure Record, have a special meaning; they include all accounts and notes payable and all obligations, whether in secured form or not, known to be held by banks, officers, affiliated companies, supplying companies, or the Government. They do not include long-term, publicly held obligations. Offsetting assets are not taken into account.



Prestige  
gifts  
from  
\$3<sup>95</sup>  
to  
\$200

retail value



**Ronson's Electric Shaver**  
with the world's thinnest head,  
to give the world's closest shave.  
A **\$19.95** retail value in sturdy plastic  
case. Identical shaver in elegant  
leather case, **\$22.50** value. In luxury  
travel kit, **\$26.50** value.



**Windsor**—A Ronson favorite that  
appeals to both men and women.  
**\$4.95** retail value.



**"Windlite"** by Ronson is  
America's most talked about windproof  
pocket lighter. **\$3.95** retail value.



**Diplomat**—Ronson's elegant "Diplomat"  
table lighter in ruby and ebony finishes.  
**\$8.95** retail value.



**Trophy**—Handsome "Trophy" by Ronson—  
at home on the best tables.  
**\$12.50** retail value.

**Ronson's nationally advertised products insure  
successful gift-giving for you!**

Trademarks used with permission of owners.

Ronson keeps you well remembered because everyone knows that a Ronson gift means prestige and quality.

Ronson keeps your company name on display! Whatever Ronson gift you choose, for Christmas or any gift occasion, you can be sure that it will promote your slogan, name or trademark every day.

Ronson makes it easy for you! Just mail the handy coupon, attached to your company letterhead. You'll get full facts on Ronson's liberal price arrangements, including costs for individual decorations and finest engravings. And you'll be able to choose from a wide variety of Ronson products.

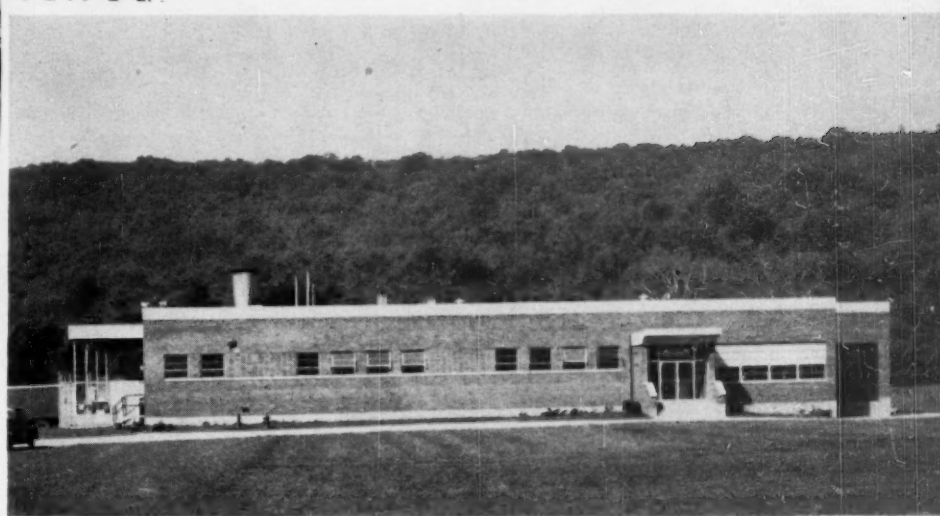
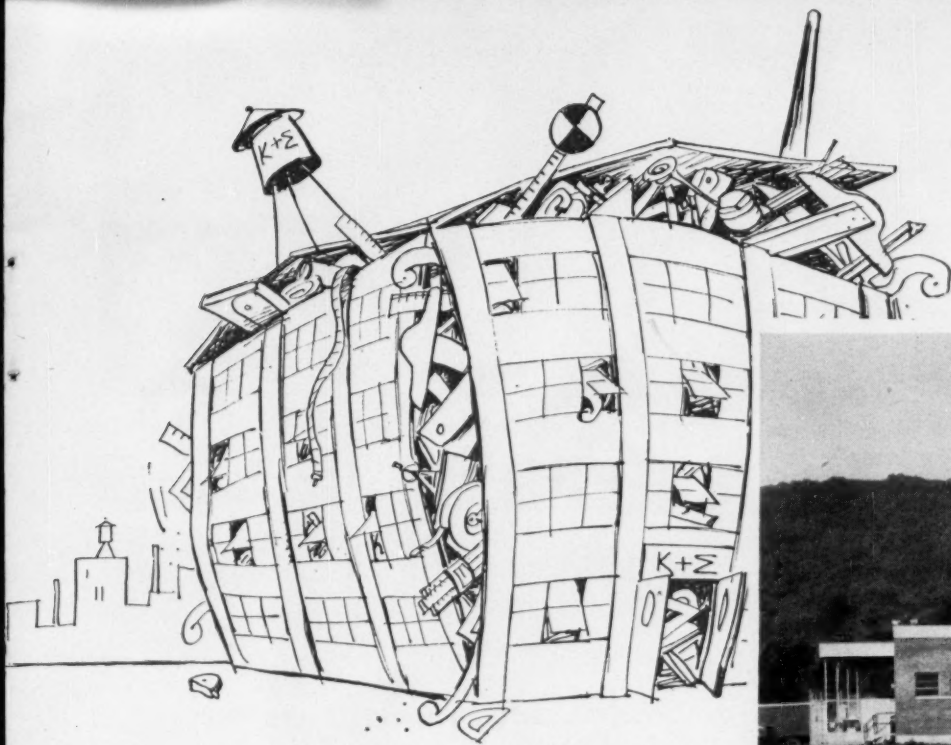


*Maker of the world's greatest lighters and electric shavers*

Ronson Corporation Special Sales Division 31 Fulton St., Newark 2, New Jersey	DR-2
<input type="checkbox"/> I would like complete information on Ronson lighters for business gifts.	
<input type="checkbox"/> I would like to have your representative call me.	
name _____	
company _____	
street and address _____	
city and state _____	







## Breaking Out of a BEEHIVE

CARL W. KEUFFEL  
*President, Keuffel & Esser Co.*

WHEN A COMPANY maintains all its manufacturing operations in one location for nearly three-quarters of a century and then, within eight years, adds five new manufacturing divisions and a distribution center in as many different communities, the experience gained in this sudden decentralization activity may be helpful to other firms.

The following, therefore, is offered as a case history of the most interesting aspects of how Keuffel & Esser Co. broke out of its beehive and gave important segments of its widely diversified product lines the room to breathe and grow.

How do you decide whether you should decentralize? There are many factors which should be weighed in answering this question and they doubtless would be somewhat different for each type of company. But, in our case, the decision was literally forced upon us.

From 1880, through World War II, K&E had manufactured its drafting, reproduction, and surveying equipment, slide rules, and measuring tapes in a series of multi-storied buildings clustered around an intersection in Hoboken. Trite

as the description may be, these buildings and the factory operations they contained just "grew like Topsy." During those years, the company was too busy to do much intelligent planning.

But then the time came when it was obvious that we had to face up to some hard facts if K&E was to expand to take advantage of developing opportunities.

The decision wasn't too easy to make. We like Hoboken. When William Keuffel and Hermann Esser in 1880 installed their growing business in a three-story Hoboken factory, the city doubtless was much different than it is to-day. They found its adjacency to New York to be an important asset, which is just as true now. But, even though K&E intends to maintain most of its manufacturing operations in its present Hoboken buildings, the city simply didn't offer us the expansion opportunity necessary. Because of high tax rates, we would have had to erect more multi-storied structures and this we wanted to avoid, simply because we feel, along with many other present day managements, that such buildings are inefficient.

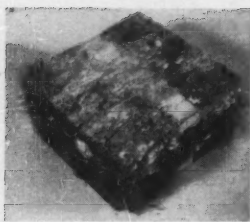
Although, as I have said, we located new manufacturing operations in five different communities, I should like to make the most detailed report on one of them. This is our Cape May Division, established at Cape May Court House, New Jersey. It actually was the fourth in the sequence but, as we had learned much from the others, it provides the best case study.

It would pay you, as a business man, to say every few years, "I'm going to move". It is amazing what increased efficiency can result from the engineering studies involved in moving manufacturing operations.

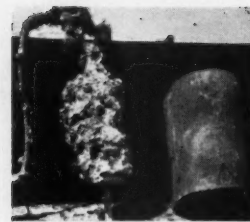
Consider a moment what we were contending with in Hoboken in making tapes. Our manufacturing operations were scattered over several different buildings on two sides of a busy street. The press work, plating, tape line, and assembly operations were carried on in four widely separated sections. Four different elevators were involved. There were inefficiencies making for high costs and low production.

In making the decision to move the tape manu-

*Continued on page 68*



WOOD



METAL

# What they've learned in 20 YEARS AGAINST CORROSION

ANNESTA R. GARDNER

Industrial Editor

*Few materials are safe from attack by wind, sun, and water. But much can be done to protect products and equipment, as this long-term study shows.*

**CORROSION** is industry's most crippling disease. Every year it destroys millions of dollars worth of materials and causes product damage that runs into the billions. There is no vaccine to guard against it, nor universal treatment to cure it.

But much is being learned about how to control corrosion and minimize its most devastating effects.

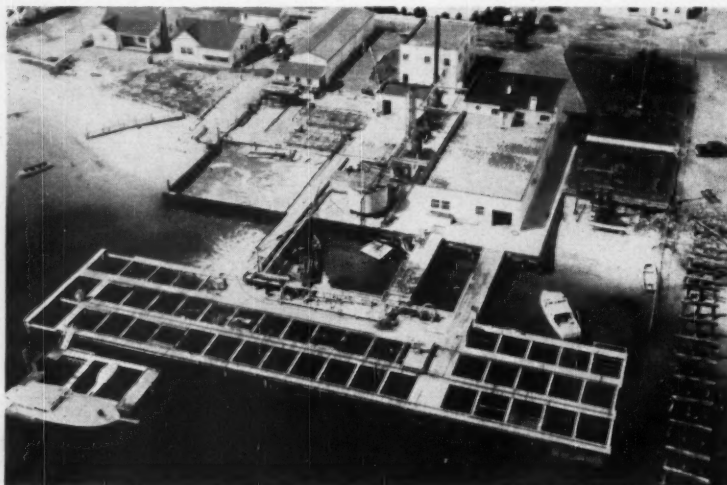
Among the leaders in this search for knowledge about corrosion is International Nickel Company's Corrosion Testing Station at Kure Beach and Harbor Island in North Carolina, established just twenty years ago.

Set up originally to compare steel alloys for seawater use, the Station has long since broadened its activities to include tests on almost every metal, wood products, cordage fibers, organic, metallic and ceramic coatings, and all sorts of fabricated products.

To-day, it has become a service for all industry, and for the government as well. The list of companies participating in test programs reads like a Blue Book of American Industry.

Not that a company has to be big to participate. Inco will accept almost any material or product for testing provided that the test fits in with the general research program of the Station, and that it promises to contribute to the basic understanding of the corrosion process. Inco does not, of course, compete with commercial laboratories, and will not perform strictly commercial tests or provide reports that can be used commercially.

Many interesting and valuable facts about cor-



Marine testing station at Harbor Island is keystone of Inco's corrosion testing program, has immersion facilities, laboratories, library of samples (opposite page). It plays host to many technical society meetings each year.

rosion have been uncovered in the past twenty years; of which a few are listed below:

**1. There is no substitute for field testing.** Frank LaQue, Inco's Vice-President in charge of Research and Engineering believes—and has done much to prove—that basing decisions on laboratory research alone is a good deal more dangerous than flying on one wing. Studies at Kure Beach show that not only are laboratory and field results different as to degree, they sometimes don't even result in the same kind of corrosion.

On zinc, for instance, the standard salt spray produces a soft, gel-like corrosion product which is entirely different from the hard corrosion product formed by nature. Furthermore a 3 per

cent salt solution does more damage to steel in a spray cabinet than one which contains 20 per cent of salt—quite the reverse of what might be expected.

While recent changes in salt spray test techniques are said to make this method considerably more realistic than it used to be, for some purposes at least, few would deny that field testing is still advisable if not indispensable.

Inco, incidentally, practises what it preaches. When, recently, it developed a new alloy, *Nionel* for chemical use, it had a number of parts fabricated and farmed them out for two years of production-line work in several chemical plants. Naturally, *Nionel* was tested at Kure Beach, too. But LaQue knew that the only way to find out how a material will really behave under a given set of conditions is to try it

out under those conditions. All the other tests are just indicators or confirming evidence.

**2. Actual location of the part in service is tremendously important.** It makes a difference, for instance, whether a material is in the water, on the shore, or as little as 300 yards away. Not only is the rate of corrosion different, but also the corrosion pattern. Even in the water, different results are obtained when materials are placed above or below the low tide line.

**3. A little protection is a dangerous thing.** Where there is a choice, it is far better to have equipment fully exposed to wind and weather than partly protected by sidewalls or canopies.

When window screening is set-up so that part

*Continued on page 80*

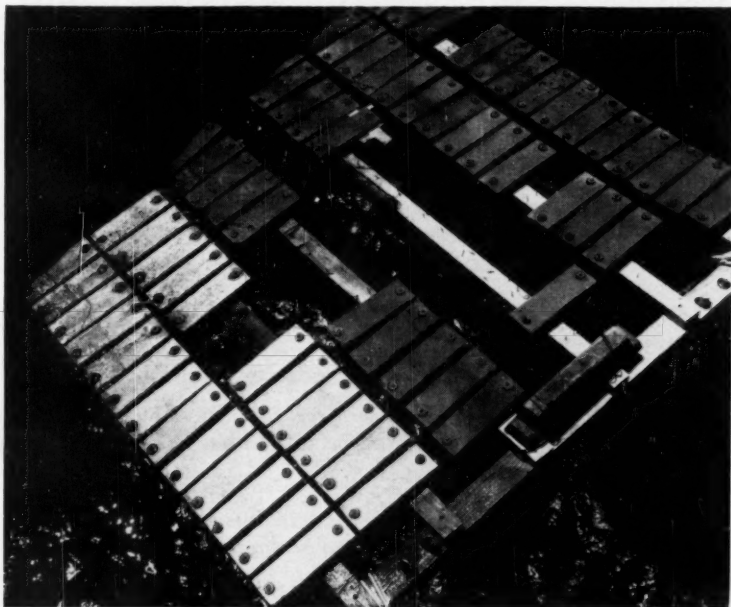




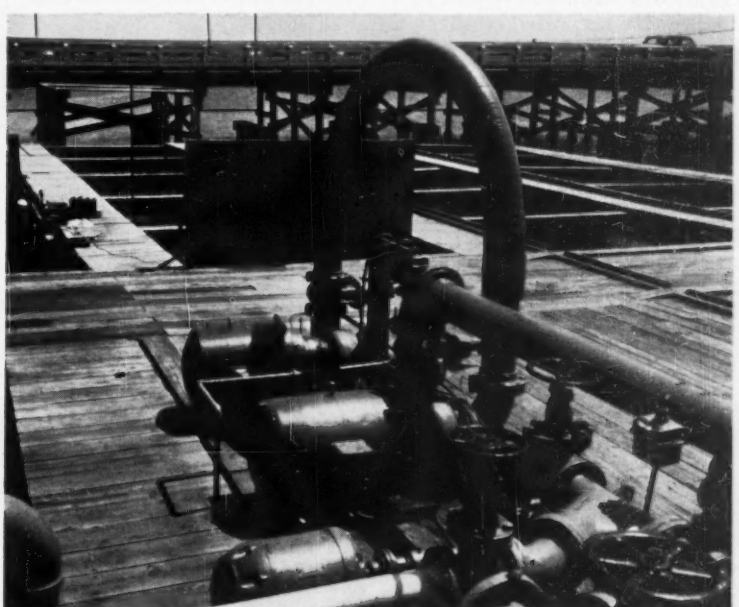
Cordage fibers are attacked by wind, water, and marine life just as wood and metal are (opposite page). Photograph above shows new samples



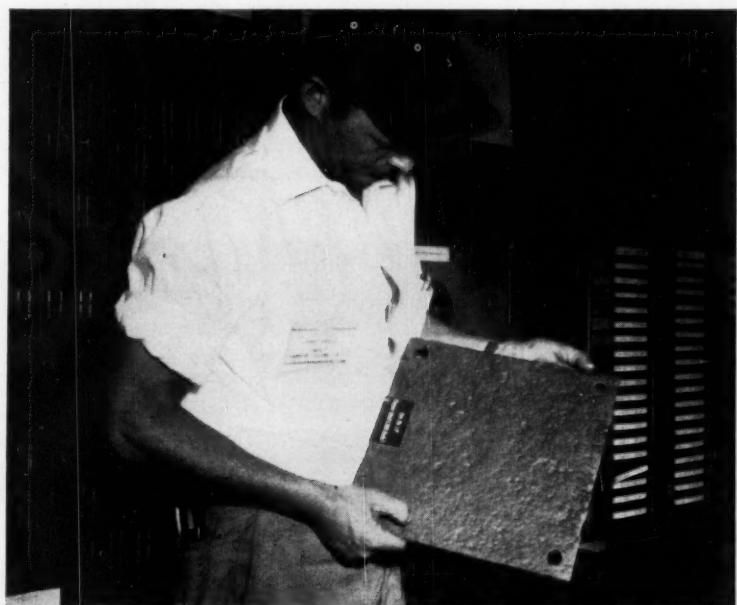
going in; then see what happens to them. Synthetic as well as natural fibers have been tested, and methods devised to prolong their useful life.



Metal strips like those above help evaluate materials for new products, but full-scale tests of fabricated equipment are still necessary. Photograph



at left shows comparative test of stainless steel, Monel, and copper samples. Above, full-scale pumps, valves, and piping are put through use tests.



Corrosion museum preserves test specimens and makes them readily accessible for study by interested groups. Here, Inco researcher examines



one of the first specimens, set out when station opened. In the photograph above, note the display of fabricated parts as well as standard test strips.

# How much thinking before buying?

## High spots for marketing executives

More than one-third of durable goods buyers actually spend less than a few weeks planning their purchase.

Little or no family discussion precedes a durable goods purchase in 71 per cent of the families surveyed.

Only one store was visited by 47 per cent of the people who bought a new TV set, refrigerator, washer or stove.

Only 21 per cent of the buyers remembered receiving information from advertisements and circulars.

But 62 per cent said they did not receive information from any reading material, ads, billboards, or point-of-purchase.

More than half of all buyers do not choose between models in different price classes, consider only one price.

The older and presumably more seasoned the consumer, the less deliberate his purchases become.

Rural consumers are as circumspect, almost as active information seekers as those in big metropolitan markets.

One-third of the buyers consulted only one source of information, and that not intensively, or they obtained no information at all.

The biggest single product information source is advice from friends, neighbors, and relatives.

Only one-third of durable goods buyers have no brand preferences prior to purchase. Another third looked at only one brand.

Only 13 per cent of durable goods buyers mentioned appearance and product styling as a major consideration in their purchase.

Only 2 per cent of durable goods buyers said durability, servicing, guarantees, and reliability were features they looked for.

Product information seeking increases with education and income up to about the \$7,500 bracket.

People experiencing financial strain are no more deliberate in their purchases than those who feel comfortable with their current income.

Installment buyers are no more or less circumspect and only slightly more active information seekers than are cash buyers.

## For four consumer durables, here's how deliberate consumers are in buying.

PERCENTAGE DISTRIBUTION OF BUYERS ALONG OVER-ALL DELIBERATION SCALE

		Buyers of					
		Four Large Household Goods	TV	Refrigerator	Washing Machine	Stove	
Highly deliberate	(21-19 points)	*	—	1%	—	—	When the purchase decisions of durable goods consumers are evaluated according to an intricate set of criteria on a scale ranging from zero
	(18-16 points)	6%	8%	6%	3%	2%	
	(15-13 points)	14%	14%	9%	16%	9%	
Nondeliberate	(12-10 points)	21%	25%	19%	21%	18%	Nearly half of all durable goods buyers purchase more casually or less intensively than the group
	(9-7 points)	22%	22%	13%	21%	38%	
	(6-4 points)	15%	12%	25%	13%	9%	
Not ascertained	(3-0 points)	7%	6%	10%	12%	4%	This group doesn't seem to care. They buy quickly, don't hesitate on price, brand, or model.
All cases		100%	100%	100%	100%	100%	
Number of cases		360	164	87	72	55	

\*Less than one-half of one per cent



# Research comes up with surprising answers

*Detailed study of consumer buying decisions shows that many*

*purchases are made in a state of ignorance or indifference*

JAMES K. BLAKE

Marketing Editor

**A**UTOMATIC repeat buying of the same brand is infrequent regardless of previous experience."

"There is hardly any difference between durable goods purchasers who bought at list price and those who felt they obtained a particularly favorable trade-in allowance. These two groups exhibited approximately the same degree of deliberation (before deciding to buy)."

Only one person in five remembered seeing advertisements about the product they bought and "two-thirds of all durable goods buyers could not recall seeing any advertisements or reading anything about the item they purchased."

A highly deliberate durable goods buyer is likely to have this background: He has been to college; he earns close to \$5,000; he is a clerk or in sales; he is between 21 and 34 years old and he likes to shop around.

These findings and many others in a study made by the Survey Research Center at the University of Michigan will jar the nerves of a good many product designers, marketing executives, and advertising agencies. In "traditional" marketing theory, the consumer is supposed to indulge in impulse buying only for low-cost, fast-moving non-durables. When he spends a hundred dollars or more for a television set, a washing machine, a refrigerator, or a stove, he is

expected to deliberate carefully, weigh alternatives, compare brands and product features, look in several price categories—in other words he is supposed to make a rational decision based on his requirements in relation to the products available.

But does he? According to George Katona, who is the Center's Program Director, "About one-fourth of the purchases of large household goods were found to lack practically all features of careful deliberation and many more exhibited only a limited number of such features."

To get these facts, interviewers were sent to a random sample of about 1,000 families living in all parts of the United States. At least one of the four durables had been purchased by 360 families during the preceding year. The sample was representative of durable goods buyers. The questions were a combination of fixed, direct questions so that replies could be compared and quantified and "open-ended" questions to uncover attitudes and opinions. Data were also collected on income, age, education, and the like. To compensate for the possibility of substantial sampling errors, the researchers analyzed only those findings where the chances were at least two to one that similar findings would reappear in a larger survey.

First of all, what are the components of "deliberation"? The study distinguishes five dimen-

sions, elements in deliberate buying:

1. Extent of circumspectness. A long planning period, extensive family discussion, and consideration of alternatives to the purchase are part of this aspect of deliberation.

As the table on page 41 shows, only 51 per cent of durable goods purchasers spent more than two months thinking or talking about making the purchase. Moreover, 36 per cent of the consumers interviewed spent less than a month planning a major purchase! Researchers found that people who plan more than a few months (51 per cent) are divided into two equal groups: people who can't make up their minds or who are anxious to make a good buy, and those who waited for financial reasons and were not necessarily spending this period getting ready to make a shrewd purchase.

Surprising results came from answers to questions probing the extent of family discussion preceding an expensive, major durable good purchase. Roughly one family out of four engaged in extensive discussion—a similar number held no discussion at all.

Nearly 70 per cent of the buyers said they made the decision to buy without hesitating. The choice, in other words, among buying that particular product, buying something else, or simply saving their money was not difficult. Eva Mueller, who directed the study, points out that this particular aspect of circumspectness may be understated, because it is difficult for a person to recall some time after a purchase the nature and content of his doubts then.

2. Extent of information-seeking activity. Buyers were asked about advertisements, reading material such as newspaper articles, folders, mail order catalogs, reports of testing agencies, discussions with relatives and neighbors, visits to stores, and advice from salesmen.

As might be expected, the researchers found a wide variety of behavior, but several striking findings became apparent. "One-third of the durable goods buyers consulted only one source of information, and that not intensively, or they obtained no information whatsoever." The survey uncovered the fact that more than 50 per

to 21, only 20 per cent of all buyers can be called careful purchasers. These people plan, consider alternatives, seek product information,

above. This group also includes people who deliberate intensively on a few aspects of the

In some cases, they seemed to interviewers to be downright indifferent and apathetic. They do

check into a number of different product features, and then reconsider alternatives. For them, a purchase is a problem to be solved.

purchase, but in so doing ignore other important facets of well-balanced consideration.

little or no information seeking, have no strong motivation to make the right decision.

cent of durable goods buyers got advice from relatives and neighbors (the largest single information source) and a third of the buyers bought a brand or model they had seen at someone else's house.

The next important source of information was the store itself, or rather several stores. As the table on page 41 shows, more than 40 per cent of the buyers surveyed went into more than one store to compare models and brands. Of greater significance for marketing executives, however, is the fact that 47 per cent visited only one store and bought before leaving!

In many respects the most astonishing aspect of consumers' information-seeking activities is their lack of conscious response to printed material. Only 20 per cent of durable goods buyers remembered reading advertisements about the product they bought. The researchers comment: "Unless one has an active interest in the purchase of one of these durables (refrigerator, stove, TV, or washing machine), the advertisements may do nothing more than maintain a vague awareness of brand names. The question was whether, several months after the purchase, people remembered having paid attention to advertisements or other reading materials. The chances are that a positive answer was given to this question only where the information received was salient to the purchase decision." If this analysis is substantially correct, about 20 per cent of durable goods buyers receive salient information from advertisements.

For the buyers as a group, one key clue sticks out. The personality type who goes to friends and relatives seeking information about his projected purchase will usually consult other sources of information in addition before making a decision. And persons who do not consult that basic source are less likely to consult others.

The researchers have a strong suspicion, therefore, that information seeking is a cumulative process. For instance, people who reported that they knew what they wanted from the beginning might be expected to look around less than those people who did not know what they wanted, mainly because the first group presumably already had enough data to satisfy itself. The survey revealed, nonetheless, that the two groups were very similar, with the group that knew what it wanted from the outset being somewhat more active than the group which had not made up its mind! Apparently learning a little creates a desire to know more.

3. Choosing with respect to price. The underlying assumption here was that one aspect of careful deliberation involved seeking price information. A deliberate buyer compares a product in several price ranges before purchasing. Discount buying, or sale buying, showed deliberation only if the interviewer found that comparisons had been made. Over half of all buyers did not choose between models in more than one price range. And only 14 per cent considered models both higher and lower priced than the one they purchased.

4. This index distinguished between people who knew what brand they wanted from the beginning and people who considered a large number of brands. A previous question had determined that more than 90 per cent of the buyers interviewed knew the brand name of their new refrigerator, TV set, or washing machine, and 82 per cent knew the brand name of their stove. With brand consciousness well established, direct questioning brought out the fact that only one-third of durable goods buyers limit their attention to a single brand and an equal proportion said their choice at the outset had been wide open. Nearly 20 per cent choose among only two or three brands.

5. The final index was premised on the fact that a deliberate buyer considers many more product features than a casual buyer. Not many consumers measure up to this aspect of deliberation; in fact, only about 35 per cent of durable goods buyers consider more than one feature of the product other than price and brand. With the increasing emphasis upon color and styling and "human engineering" in the design of consumer durables, it is surprising to note that only 13 per cent of all buyers surveyed mentioned appearance as a major consideration. Brand, mechanical properties, and size were the features most commonly mentioned, although 39 per cent (the largest single grouping) of consumers claimed they had no particular features in mind. There is room for considerable speculation in the small percentage (only two) of consumers who mentioned durability, servicing, guarantees, and reliability as being features they were looking for in durable goods. Only 10 per cent of the buyers even remembered receiving information about these features from printed material or from sales personnel.

What picture emerges when these five indexes are related to each other? First of all, there is a strong relationship between the extent of a consumer's circumspectness (defined under "1", page 39) and the degree of information seeking he exercises. Only 9 per cent of those people who were very circumspect, for instance, engaged in no information gathering at all. Moreover, people who were very circumspect were likely to choose among two or more price levels and on the basis of more product features than people who were not circumspect.

The correlation among the three indexes of choosing (brand, price, number of features) was surprisingly weak. Roughly a quarter of the buyers scored at the top on one index, but at the bottom on one or both of the others. The research team defined this situation as "feature substitution" and decided that these buyers either substituted thorough consideration of one attribute of the product for concern with other features, or else were in a situation where their interest in one feature precluded interest in other aspects of a balanced buying decision. If he wants only one price range, for instance, he doesn't bother to look at other models, other features in other price classes.

Combining all of these indexes into a master deliberation index (see page 38) leads to the conclusion that "Any notion that careful planning and choosing, thorough consideration of alternatives, and information seeking accompanied every major purchase was contradicted by the data for each of the four durables. Rather, it appeared that there were great differences among buyers and that many purchases were made in a state of ignorance, or at least indifference."

Another implication of this type of research on purchasing decisions is that the time is coming when more expensive and larger scale studies will be able to furnish quantified accurate, pinpointed consumer information custom tailored to a product's market. This relatively small study, for instance, suggests that the segment of the population in greatest need of product information are the least likely to look for it. Information seeking increases with education and income up to about the \$7,500 bracket. Among durable goods buyers with a grammar school education and incomes under \$3,000, those who neglected to look for product information outnumber active information seekers by about seven to one. And 13 per cent of those who went only to grade school obtained salient information from advertisements as compared with 23 per cent of the college educated consumers.

An old stereotype in marketing clung to by some executives is that the farm and rural market must be handled differently from the suburban and city market. The Survey Research Center's findings lend further emphasis to the argument that the automobile and mass media are making the national market more homogeneous. They discovered that information seeking was only slightly more active in metropolitan areas than in rural counties and that there was no noticeable difference between medium-sized cities and rural communities.

The study, in fact, challenged a number of seemingly logical marketing concepts. For instance, one might expect that people who buy on credit would be more deliberate than those who pay cash. The survey showed that, although cash buyers were "somewhat" more active information seekers than installment buyers, there was no difference in their degree of circumspectness. Another apparently sound marketing observation might be that the older the consumer, the more deliberate and careful the purchase. Actually, this applies only to around age 34. After this, the "motivation to use financial resources to best advantage becomes weaker. . . ."

*Material for this article, including all charts and tables, is based on a research project undertaken by the Survey Research Center of the University of Michigan. The completed study (by George Katona and Eva Mueller) has been included in a book published by the New York University Press, Consumer Behavior, The Dynamics of Consumer Reaction.*



# Nine tables chart buying characteristics

*Sales executives will want to check these carefully. They show more*

*careless buying, less deliberation than marketing strategy now assumes.*

*Read the first table, for instance, to check buyer interest in guarantees.*

## Price not an important feature

**Question:** "Before you started to look for a \_\_\_\_\_, did you have any clear idea about what you were looking for, or didn't you? What kinds of ideas did you have?"

Types of Features	% of Buyers
Price.....	6
Brand.....	21
Mechanical properties.....	21
Performance.....	9
Size or capacity.....	19
Appearance.....	13
Durability, servicing, guarantees, reliability.....	2
Operating costs.....	1
Other.....	3
No specific features.....	39
Not ascertained.....	3
All Cases.....	*

\* More than 100 per cent because some customers mentioned more than one feature.

## A little or no family discussion

**Question:** "Did you discuss what kind of \_\_\_\_\_ you should buy in your family—at length, only a little, or not at all?"

	% of Buyers
Extensive family discussion.....	27
A little family discussion.....	44
No family discussion at all.....	27
Not ascertained.....	2
All Cases.....	100

## Information from friends and relatives

**Question:** "Before buying, did you talk with friends, relatives, or neighbors about different kinds of \_\_\_\_\_, a lot, a little, or not at all?"

	% of Buyers
Extensive discussion.....	17
A little discussion.....	37
No discussion.....	43
Not ascertained.....	3
All Cases.....	100

## How much brand switching?

**Question:** "What brand or make was it? What brand was your old \_\_\_\_\_?"

	% All Previous Owners
Purchased same brand.....	22
Different brand.....	67
Don't know*.....	8
Not ascertained.....	3
All Cases.....	100

\* Study comments, "Chances are that most of these people were not brand conscious and bought a different brand."

## How long do people think before buying?

**Question:** "Could you tell me how long you were thinking or talking about buying a \_\_\_\_\_ before you actually bought it?"

Planning Period	% of Buyers
Several years.....	8
One or two years.....	13
Several months.....	30
One or two months.....	9
A few weeks.....	19
A few days.....	13
One day or less.....	4
Not ascertained.....	4
All Cases.....	100

## Little choice exercised on price

**Question:** "Before deciding on the \_\_\_\_\_ you bought, did you also consider \_\_\_\_\_'s, which cost much more or much less than the one you bought?"

	% of Buyers
Considered also more expensive models than the one purchased.....	16
Considered also less expensive models than the one purchased.....	9
Considered both.....	14
Considered only models in one price area.....	57
Not ascertained.....	4
All Cases.....	100

## Not much help from reading material

**Question:** "Did you follow any advertisements or did you read anything else about \_\_\_\_\_'s before you bought?"

	% of Buyers
Said they obtained information from reading material.....	33
Advertisements, circulars.....	21*
Magazines, newspaper articles.....	12
Reports of testing agencies.....	3
Mail order catalogs.....	2
Other.....	6
Said they did not obtain information from reading material.....	62
Not ascertained.....	5
All Cases.....	100

\* This column adds to more than 33 per cent because 11 per cent of the respondents got information from two or more types.

## Few stores before buying new durables

**Question:** "Did you go to several stores, or to two or three stores, or just to the one where you bought, or none?"

	% of Buyers
Several stores.....	26
Two or three.....	15
Only one where bought.....	47
No stores at all.....	11
Not ascertained.....	1
All Cases.....	100

## Brand consciousness limits choice

**Question:** "Did you know from the beginning what make you wanted, or did you think about two or three brands, or was it a wide-open choice?"

	% of Buyers
Knew from beginning.....	33
Considered two or three.....	18
Wide-open choice.....	31
Paid no attention.....	6
Not ascertained, inapplicable....	12
All Cases.....	100



# EMPLOYEES BUY *into the Company*

*Stock purchase plans, many combined with savings programs and liberally aided by corporate contributions, are on the increase. More are on the way.*

ALFRED G. LARKE  
Employer Relations Editor

**P**ROBABLY more employees are buying the stock of their own employers this year—or having it given to them—than at any time since the 1920's.

The trend, which started several years after World War II and so far has been gradual, is bound to be accelerated by this year's collective bargaining in the automobile industry. The Auto Workers Union spurned stock investment plans offered by General Motors Corporation and Ford Motor Company as a substitute for the guaranteed annual wage, but apparently salaried workers are going to get them.

It has been the custom in major industries to pass along to non-union white collar employees wage increases and fringe benefits comparable to those gained by hourly-paid union employees. But this time there will be no extension of the union scheme to salaried personnel.

Instead, General Motors announced last month that stockholders will be asked September 23 to approve a savings and stock-purchase plan for salaried workers. Under it, the employees might authorize deduction of up to 10 per cent of base pay (plus cost-of-living allowance) for a savings fund, half to be invested in government bonds, half in GM common stock. GM would contribute an amount equal to 50 per cent of employee savings, to be put into GM common stock in the employee's name. An employee electing a savings plan might withdraw at any time, but would acquire a right to the company contribution only gradually during the third, fourth, and fifth years of his participation in a class. After five years, he would be guaranteed cash and securities at least equal to his contributions plus interest, regardless of the market value of the stock. An em-

ployee electing a retirement plan might obtain the company-purchased shares only upon retirement or termination of job.

Henry Ford II has announced that his company, also, contemplates a similar plan. The Ford offer to the Auto Workers Union was virtually identical with the GM plan now proposed for salaried personnel.

Existing employee stock-purchase plans are heavily concentrated in oil and utility companies. If GM and Ford precedents are followed, however, by other companies confronted with demands for wage guarantees in the factory, stock purchase programs should become much more representative of industry as a whole.

Meanwhile, many companies are encouraging employee share-ownership by means ranging from simple advice to complex trusted plans.

One company simply publicizes the New York Stock Exchange's Monthly Investment Program, telling employees how to set up an MIP account through a broker (Pacific Telephone Company). Another gives shares of low-par-value common stock as a one-time Christmas bonus (Bassons Industries Corporation, New York).

At the other end of the scale is an oil company program which to date has seen company contributions, based on a percentage of profits before taxes, pour into a stock purchase fund a ratio of almost \$2 for every \$1 of employee savings (Standard Oil Company of California). In another combination savings, retirement, and profit-sharing plan, corporate contributions are on a sliding scale of 5 to 10 per cent of profits (Sears, Roebuck and Company).

Participation may be provided through gifts as in one concern, whose employee-shareholders are veterans who received stock certificates

instead of gold watches as 25-year awards (National Container Corporation). Or it may total more than 96 per cent of all eligible employees, as in one oil company (Standard of California). More typical is the Inland Steel Company option plan, just renewed last month. In its first three-year term, 74 per cent of supervision, 40 per cent of total payroll participated.

Stock option plans are the least numerous of three major current types. But stock purchase plans, which in the 1920's committed an employee in advance to take shares at a set price, have been refashioned to be very much akin to the option plans. In many or most, the employee can change his mind and withdraw his commitment after he has saved up his money.

As numerous as the new stock purchase plans are the employee thrift or savings schemes, the chief difference being that the employers make substantial contributions to the latter. And, naturally, employee participation is far higher.

While the number of programs is increasing steadily, the total still does not approach that of the pre-depression decade. At that time, probably 300-400 U.S. companies were encouraging workers to invest in their stock.

To-day the total is probably closer to 100-125. Two and a half years ago, the National Industrial Conference Board reported, after exploring "all known sources of information," that it could find only 68 stock option and stock purchase plans open to the bulk of company work forces, and of these ten had been abandoned and 30 were inactive. At the same time, the NICB turned up twenty thrift or savings plans involving stock purchase. (See NICB's *Studies in Personnel Policy*, No. 132 and No. 133.)

Why employee stock ownership has been adopted by many employers within the last few





INLAND STEEL COMPANY PHOTOGRAPH  
Man, wife, and their first-bought share

## *Option, Purchase, or Stock Savings, the Current Plans Have Details Designed to Safeguard Both Company and Employee*

Some post-war employee stock purchase plans have proven as unsatisfactory to employer and employee alike as those of the 1920's. One food industry concern, for instance, abandoned its program when a sharp drop in the value of its stock, immediately after employees had invested, created a bad morale problem. A company in a non-ferrous metal industry found so few takers among its hourly-paid workers that it dropped the plan except for those already in it. One big electrical industry corporation failed to renew its plan when a stock market drop cut employee participation substantially.

Three general devices are in use in current plans, however, to mitigate the effect of stock market fluctuations, even if not to eliminate it. One is the adoption, in stock purchase plans, of a feature of option plans—the employee is permitted to withdraw his savings from the plan if he wishes at any time before a period of the plan (usually two and a half to three years) comes to an end. Thus, if prices go down, he need not

go through with his purchase.

Another kind of safeguard exists in some thrift plans, in which the employee's savings go into government bonds and only the company's contributions purchase stock.

The third means of obviating price fluctuation is a kind of "dollar cost averaging" achieved in plans in which stock purchases are made monthly, or once every six months, or in which the cost per share charged to the participant is the average that the company (or trustee) paid per share over a given period. These methods have what an engineer would call a feedback. When prices are high, a given sum of money buys few shares. When prices drop, the same amount is invested and many more shares are bought. The average price per share is less than if a set number of shares were bought each time.

In stock option plans, stock is priced at 100, 95, 90, 85, or even 80 per cent of market value on a given date. In all company plans that have come to DR&M's attention, even where the employee is charged the cost of buying stocks, the employees enjoy lower brokerage fees than individual investors, because their purchases are lumped and they get the benefit of "round lot" charges applying to purchases of 100 or more shares, instead of the "odd lot" prices

for fewer than 100.

Eligibility rules vary. In two companies, the employee must be a member of the retirement plan to participate. Two are limited to employees of foreman rank or higher. Where the company contribution is substantial, as in the thrift and savings plans, only employees with five years' service (and sometimes of a certain age or more) are eligible. Otherwise, the trend seems to be to include all employees who have passed the probationary period.

Where the company contributions are a major feature, members withdrawing from a plan before retirement or termination of job most often forfeit all or part of their share in the company-donated portion of their accounts. There are a number of complex pro-rating schemes for vesting interest in company contributions, on the basis of years of service.

Even where there is no company contribution, but stock is sold to the employees at lower than market value, there is usually a requirement that a trustee hold it for two years. This not only saves the employee from an income tax on the difference between cost and market value but also permits the employer to charge the amount to operating costs, if the stock price is not less than 85 per cent of market value.

years is not evident in formal prospectuses or other notices to employees, nor even from discussion with officials of the corporations involved. But in general it seems the timing may be attributed to some or all of these factors:

1. Increased awareness of the urgency of good employee communications.
2. Subsidence of the fears left by the kick-back of earlier employee stock plans which ran afoul of plummeting market prices in the 1930's.
3. Recent tax developments and the devising of ingenious new methods to protect employee investments and limit employer responsibility.
4. Pressure for some means of supplementing dollar-fixed retirement-plan benefits with a relatively inflation-proof form of employee fund-accumulation.
5. Habituation of industrial workers to savings through payroll deduction in war-time and post-war government bond campaigns.
6. Post-war growth of profit-sharing plans, some of which now pay off, in part or in whole, in company stock instead of cash.

The immediate purposes of individual stock, on the other hand, are stated clearly:

To give employees an opportunity to share in

ownership of the companies they work for;

To further an understanding of company problems and methods, and of the enterprise system;

To create a greater sense of responsibility and to improve the work effort;

To spur participation in "contributory" pension programs by making eligibility for one stock plan depend upon membership in the other;

To encourage employees to save;

To help them build a hedge against inflation for their years of retirement; and,

To transfer ownership of the company to steady employees, in a few instances.

Few of the plans that have come to DR&M's attention are in very small companies. It may be that employees of small companies, able to see the company whole at first hand, have a better understanding than those in big corporations, without need for a device like stock ownership. Small companies, also, often have too few shares to operate such a plan. They may lack a good means of establishing the fair value of their stock, if it is not traded in an open market. Profit-sharing programs, with cash payments fairly

frequent, or, in some cases, upon retirement (see *Modern Industry*, July 1950, page 52) are numerous in medium and small companies. Since their objectives are much like those of the stock ownership plans, they may be the natural small-company solution to the same set of problems confronting bigger concerns.

If building up of savings for retirement and encouraging employees to own a stake in industry were the sole aims of stock purchase plans, small companies with limited stock might encourage employees to invest savings in diversified stocks, directly or through a device like the Stock Exchange's MIP or by payroll deduction through a program like The Quinby Plan of Rochester, N.Y., an investment method readily adaptable to employee group stock purchases.

But almost all employers appear to feel the shares must be those of the employee's own company. Few provide for investment in any other securities, except government bonds. Exceptions:

Socony Mobil Oil Company, Inc., New York, N.Y., permits employees to choose among government bonds, company stock, or 52 eligible investment companies for investment of their savings. Purolator Products, Inc., Rahway, N.J.,

last month announced a thrift plan, trustee funds of which "will be invested in government bonds, company stock, and other investments."

The Sears, Roebuck and Company profit-sharing fund, unusual in many ways, not least in that it owns over 26 per cent of outstanding Sears stock, has since 1941 let trustees invest in other interest-bearing obligations as well as company stock. In this program, employees contribute 5 per cent of their pay up to a maximum of \$500 a year and the company adds 5 to 10 per cent of its net income. A sliding scale of participation in the company contribution, increasing with seniority, provides a built-in motive for leaving shares untouched until at or near retirement. Then they may be withdrawn or converted into an annuity.

One other plan, that of E. G. Shinner & Company, a chain of Mid-west retail meat markets with headquarters in Chicago, Ill., permits fund trustees to "acquire and retain every kind of property, real, personal, or mixed, and every kind of investment, including bonds, debentures, preferred, or common stocks" and even real estate mortgages. This is an unusual plan, too. The employees' trust fund owns the company outright as the result of the program.

Other companies limit stock purchases to their own shares, and H. D. Quinby, Jr., sponsor of The Quinby Plan, has had no takers for his suggestion that corporations encourage mixed investments. Not connected in any way with the Eastman Kodak Company, Rochester, N.Y., he nevertheless has a number of Eastman employ-

ees subscribing to a \$20-a-month-minimum plan for accumulation of Eastman stock, with a local trust company as custodian. Quinby's plan has been in effect since 1938. Since 1953 the Eastman Company has carried out voluntary payroll deductions for participants in its employ.

For other investors in Eastman, as well as those in Quinby plans for DuPont, General Motors, and Standard Oil (N.J.) stocks, the minimum is \$25 a month for as long as ten years.

The Rochester program credits to investors' accounts promptly both single and fractional shares of stock, dividends, and other rights, with brokerage fees at or below round-lot rates. It has elements tending to keep purchasers in the plan for the full term, once they have started. Monthly reminders of investments due are mailed out, as well as monthly receipts; and the bulk of fees comes out in the first year, discouraging drop-outs.

Aside from the Auto Workers Union's rejection of GM and Ford offers of savings and stock purchase plans, unions seldom balk at company plans. The Atlantic Refining Company, Philadelphia, Pa., has negotiated its plan with a number of unions representing its employees. Most other companies have at least the tacit approval of unions of their employees. When Dow Chemical Company started a purchase plan in 1948 (45 per cent of employees now participate), United Mine Workers officials kept silent when members sought an official attitude. But when later plans were started, the local union told members it had no objection.

Inland Steel Company, however, did not offer its first plan, three years ago, to coal miners, because of United Mine Workers Union objections. This year, the miners' union offered no protest and miners are in on the second three-year stock option plan.

One serious union protest that may cool off corporate interest in stock programs, if it is upheld, has occurred in connection with a plan announced two years ago by Richfield Oil Corporation, Los Angeles, Calif.

In this plan, in which the employee may contribute, by payroll deduction, from \$5 a month up to 5 per cent of his pay, and the company an amount equal to from 50 to 75 per cent of his savings, employees may instruct the trustee to vote their stock as they wish.

The Oil Workers International Union demanded that the company bargain with it on details of the plan, contending it constitutes a form of wage. The company declined. Its contributions are neither wages nor working conditions, and that it need not deal with the union as representing stockholders as well as employees, it said.

The union filed unfair labor charges, and the National Labor Relations Board sustained them, ordering Richfield to bargain. The case is now before the U.S. Circuit Court of Appeals.

Meanwhile 80 per cent of eligible Richfield employees are participating in the plan, the company says.

### *These employees practise ownership with their own corporation*



This is house employees' "jack" bought.



OSCAR & ASSOCIATES PHOTOGRAPH

Stockholder, officer: earn as they learn.

"There are so many campaigns to prove that money is evil and anybody who puts it to work is bad," says Robert L. Giesel, 39-year-old president of Adolph Plating Company, Inc., Chicago, Ill., "that I decided it would be a good idea to give our employees a chance to put *their* money to work and find out what it was all about for themselves."

So, in December 1953, Future Development, Inc., was established, shares available at \$50 to the 25 senior employees by payroll deduction in units of \$5 a week. Each year the 15 with next-highest seniority become eligible to buy shares. Only two non-employees hold shares: Adolph Plating's counsel, who is secretary and gives free legal advice; and its auditor, who keeps books without charge. Future Development is no wastrel.

By December 1954, the employee-owned corporation had accumulated \$18,500 in capital and proceeded to buy a 15-unit apartment house in a white residential district near the area where many of Adolph Plating's Negro production force lives. Value of the 35- to 40-year-old building is down because of its loca-

tion, but would mount if residential lines moved a block. Then, too, many of the building's working owners might become their own tenants. Meanwhile, Future Development, Inc., has spruced up the apartments and is paying off the mortgage from rental income.

This December, Future Development will go looking for more real estate in which to invest the savings of this year's 40 share purchasers. Future Development will have \$43,000 capital by December and is growing faster than Adolph Plating.

All employees attend quarterly meetings at which Future Development business is conducted, but only shareholders can vote, of course. By voters' consent, Giesel is president; several production employees are officers and Ullis Woodard, vice-president (above with Martha Mansker, assistant secretary), is also on the board—he bought 25 shares the first year from his foreman's pay.

Future Development, Inc., fits no standard description of an employee stock purchase plan, but as schooling, Giesel will stack it up against any.



# 10 CHARACTERISTICS..

## 1. APPEARANCE

Usually above average.

## 2. EDUCATION

Usually average or above, but over-played.

## 3. PERSONAL LIFE

Externally superior. Home, cars, children's schools, top level or above for income.

## 4. HEALTH RECORD

Spotty; sick leaves for overwork, nervous exhaustion; also physical disability, especially ulcers, intestinal dysfunction, and high blood pressure.

## 5. FAMILY LIFE

Fair. Ostentatious pride in being "good family man," while showing backstage domestic friction paralleling nervous upsets.

given by the author, a management man of a well-known company, as clues which can serve in the recognition of the inadequate executive.

## 6. ALCOHOL

Pattern not usually distinctively excessive.

## 7. PERSONALITY

Good on first impression, poor and inconsistent on longer acquaintance; over-solicitation of superiors, inconsideration of subordinates.

## 8. PRODUCTION

Disappointing; assignment completed with poor results though often with apparent reason for the disappointment. Lack of vision concerning ability or inability to handle assignments.

## 9. CO-OPERATION

Inconsistent. Overly enthusiastic and co-operative with problems considered a challenge; resentful, nervously upset with problems considered beneath him.

## 10. RESPONSIBILITY

Poor and decreasing.

## *The Executive of Inadequate Personality*

THE EXECUTIVE of inadequate personality is one of the costliest, most difficult problems facing industry to-day. An oversimplified definition of this executive is one who shows a combination of apparent talents and characteristics indicating a productive level considerably higher than that which he actually attains. Observed over years, he may occasionally produce at mid-level or above, but his production is inconsistent and its average low. (It has been proved and publicized that this may result from factors outside the individual, such as hazy inadequate supervision, and poor definition and over-lapping of position areas—but here inefficiency, tension, employee friction, and low production *throughout* the area will spotlight the fault as that of management and organization

rather than individual inadequacy. The executive who, in a well-managed and efficiently functioning area, is still unable to live up to outward promise, is one to be early suspect.)

The following case presents a good picture of him, and illustrates well one of his outstanding characteristics—ability to fail most assignments, yet sell himself for further assignments.

Tom Jones, age 31, applied for and received a position with the DEF Corporation. He was an upper-fourth-of-his-class student from a leading Canadian university and had two years of post-graduate work in England, followed by further study at one of our top business administration schools. He had then worked a total of four years with two public accounting firms—excellent recommendations from both. He had

received his certificate in Public Accounting, and his stated reason for leaving the second accounting firm was that he had wanted only enough public accounting to get his certificate. (Some years later a supervisor of his learned that he had been "discouraged from remaining with the second accounting firm" because two different clients with whom Tom had worked had reported that he had been unable to visualize the scope of their accounting problems.)

He was hired as an auditor in DEF's Controller's Department, and at the end of one-and-a-half years he requested and received transfer to Marketing Research. His first supervisor commented that Tom's initiative had not lived up to his apparent ability.

Again, one-and-a-half years later, he was trans-

ferred to the Advertising Department to do a study of comparative advertising media. The reason given by his supervisor for the second change was Tom's lack of imagination. Before beginning his special assignment he took a month's vacation without pay because of "over-work and nervous exhaustion," which he attributed to his last supervisor having been "too meticulous and too demanding." His report on media took two years for completion and though considered highly satisfactory, opinion was that it could have been finished in half the time.

### Additional Moves

Because of "lack of expressive ability" he was switched to the Sales Division as "Supervisor of Special Promotions." Punctuated by three leaves of absence totalling seven months spent at a New Jersey "health farm" recuperating from "nervous exhaustion and a probable ulcer," this assignment lasted six years and ended in complete failure, but, partly because opinion was that the assignment had been a mistake and partly because the president of the company, impressed by Tom's intellectual capacity, was against his termination, he was continued with the assignment of, "Assistant to the President."

Upon the president's retirement Tom was put on an analysis of sales costs under the supervision of a vice-president. This assignment dragged on two years without result, and at the end of it his termination was considered by top management, at a meeting of which one of Tom's former supervisors stated, "You fellows are running away from this problem because it's a sticky one—if you unload Tom one more place, you're going to have a personnel problem you can never lick."

But again because of the ostensible argument that some of his assignments had been "ill-advised" and "unnecessary and unnecessary" (and for the actual reason that he was now a fourteen year employee, 45 years old) he was once more switched to the Advertising Department as "Advertising Cost Consultant."

Six months after beginning this assignment he was scheduled to deliver an analysis of his assignment before a national meeting of advertising managers. Three days prior to the meeting, Tom's supervisor, uneasy that Tom was not prepared, attempted to go over the speech with him, not only to find that Tom lacked even a satisfactory outline but also that he claimed over-work had prevented his preparation and made him "too nervous to go through the meeting." This fiasco brought about his termination, disguised as a "year's leave of absence with full pay (\$20,000)."

The early over-all picture of the inadequate personality executive is pleasant—that of a man of considerable promise. As production level, co-operation, and assumption of responsibility all prove disappointing, there develops among his associates a tendency to believe him possessed of ability or talent, unfortunately not applicable to his recent assignment, but imme-

diately proposed as suited to some other assignment, of different nature than the last, and usually under direction of another supervisor.

This first assignment will last from several months to two years and at the end of it the supervisor knows he no longer wants this man, but he either fails to realize or to acknowledge that the man himself has failed. Often as early as the second assignment, unconscious acknowledgment is given of this man's short-comings by making the assignment one of "special assistant to . . ." or "special analysis or survey of . . ."—a mechanism tending to take him out of direct line of responsibility and reporting.

Again in 6 to 24 months the second assignment ends usually as unsuccessfully as the first. Still the deficiency of the employee is not recognized so a third assignment, with a second "special problem" is given. Although the fatal process is now well on its way, it will take several such cycles before management realizes



a serious problem has been side-stepped by a series of made assignments.

Considering the length of each assignment and the fact there are usually four to eight of them before the problem is faced, it is obvious the young man will have reached middle age before management finally recognizes it has an employee who for eight to fifteen years has been both a non-producer and a problem.

The executive of inadequate personality is frequently brought to the corporation by, or early finds an older executive with whom is formed a strong friendship, usually resulting in a protege-patron relationship. Often the protection thus offered is instrumental in continuing the process of repeated assignment failures or mediocre assignment performance, or both, since with each successive supervisor there is the disinclination to offend or displease an older member of the management team.

During the years this problem continues management gradually changes, a younger group comes in, and usually the patron has been retired by the time a younger management must finally face a problem it can no longer dodge. Although by now automatic pay increases have raised this man's salary far above any past or possible future contribution to the corporation, thus creating a strong factor for termination, opposing

factors have developed which make termination almost impossible. The subject, being middle-aged, faces difficulty in finding a position elsewhere. Since termination makes him lose the years of greatest retirement-benefit increases, it thereby causes him to lose most of his pension, in which he has built a large stake. Then too, each of the management group wishes to avoid being the individual scoundrel held responsible.

### What's to be Done?

At this state, the problem is usually met in one of two ways:

1. Management acknowledges the problem, but finding it impossible to solve puts the subject on some permanent special assignment until retirement—often at reduced salary, but always at cost far above contribution level, since from these individuals there is no consistent production. This solution is little more than charitable retirement in which the employee saves face but continues the motions of working.

2. Management finally faces the problem with termination, at a specially arranged and greatly increased severance pay compared to the corporation's regular schedule.

Whichever method is used the subject is dissatisfied since he never recognizes himself as a problem. With the first method he is chronically disgruntled because "management doesn't appreciate me"; some supervisor is singled out as "the rat who has it in for me and is keeping me down." With the second method, the employee is convinced that "management was a bunch of swine and that so-and-so Smith got me fired."

For the purpose of early recognition of these people it is of greatest help to study individual features making up the total personality picture. Besides the disappointing productive record described, the following characteristics, either reflection of or compensation for underlying insecurity and inadequacy, will be found.

*Appearance* is usually above average and almost always over-emphasized. These people are exceptionally well-groomed and finely dressed.

*Education and family background* are also usually above average. When this is true the importance of these factors is over-played by these executives, particularly after being employed for some years. These positive factors of education and background are increasingly emphasized as compensation for other factors gradually being revealed as deficient.

*In their personal lives* these men over-emphasize outward symbols of success. The maintenance of this front with costly motor cars, clubs, fine expensively furnished homes, and private schools for the children, makes them live up to or beyond their incomes. This complicates the problem by compulsion towards salary increases.

*The health record* is spotted by manifestations of nervous instability—phobias, periodic headaches, temperament, strong hatreds, and dislikes. Leaves of absence and extra vacations are taken because of headaches, exhaustion, and other nervous symptoms. Often these leaves are spent



Kroehler's merchandising division discusses a fresh new look in furniture

**"Plastics molded by General American helped us create a revolution in furniture"**

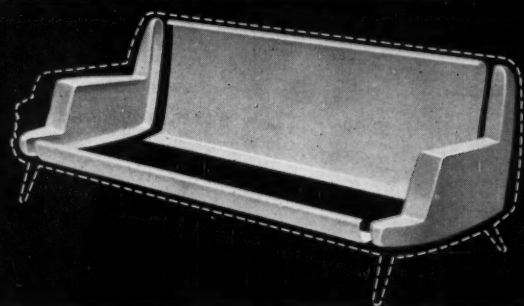
"Make it different . . . make it better . . . all the way through."

"That's what our salesmen told us . . . and that's what we did. We thought about new ways of building furniture—and we took our problem to General American. We found we could have reinforced fiber glass molded into a strong shell-like frame by General American's Plastics Division . . . that they could apply tough, easy-to-clean vinyl directly to the fiber glass to form a durable, good-looking covering.

"We discovered that this new construction gave us complete freedom in designing furniture. We used luxurious fabrics and foam rubber padding to create upholstery as comfortable as it looks. As a result, this new furniture, we found, was not only new in design, but has great strength, is easy to care for (washable, fadeproof and scuff-resistant), attractive in appearance and wonderfully comfortable to use . . . thanks to contour molding.

"Soon, you'll be seeing Kroehler's 'Revolution in Furniture' (under the Valentine-Seaver label) in your favorite store windows. Look it over. You'll like it."

*it pays to plan in plastics molded by General American*



... And this is the  
reinforced plastics frame



PLASTICS DIVISION

**GENERAL AMERICAN TRANSPORTATION CORPORATION**

135 South La Salle Street • Chicago 90, Illinois

Facilities unmatched anywhere: injection, compression, extruding and vacuum forming, reinforced plastics, painting and assembling

**CUT  
DIE  
COSTS!**

Now—Volume die production brings new manufacturing economy! Leaders in automotive, aircraft and forging industries profit from CUSTOM DIE'S proven low-cost dies for

- forging
- casting
- drawing
- forming
- stamping
- extruding

Write for full particulars  
Dept. B

**CUSTOM DIE COMPANY**  
619 May Street  
Lansing, Michigan

at spas or on cruises in an attempt to "get in shape." Symptoms are usually blamed on "over-work and nervous strain."

Paralleling their upset periods, they suffer in their domestic lives violent temper tantrums and inability to get along with their wives and children. Being unable to dissipate their pent-up nervous tension upon its source, their work and working associates, they discharge it on their families. That is why vacations and leaves are often spent away from their families.

In addition to, or as substitute for, this pattern of nervous instability, they frequently suffer physical disorders; ulcers, intestinal dysfunction, and high blood pressure being common.

### Other Factors

*Family life*, like background and education, is over-played. Superficially they are proud of their families and their rôles as "family men"; actually, as described, there are periods of domestic upset.

*Alcoholic intake* does not necessarily show a tendency toward upper limit or slightly excessive drinking during periods of nervous upset. But alcoholic consumption is seldom a major problem.

*Personality*, particularly on early acquaintance, appears good (but with qualifications). These men usually assume a "hale fellow well met" manner with their attitude and demeanor gradually and increasingly influenced by position, particularly of work associates. They are inconsiderate of those below them and artificially deferential to those above.

Basically they have little real interest in their subordinates, a fact manifested by lack of consideration. Thus they are unable to gain the co-operation of those reporting to them, resulting in lower executive ability and production. And in spite of their obsequiousness to superiors, they often show inability to sit down and speak at ease with them. The result is usually a "yes-man" pattern.

This fundamentally poor relationship with associates is gradually aggravated by factors of jealousy and anxiety, which become directed to those of their own level and below as both these groups pass and rise above the subject. Such inescapable evidence of defeat gives

rise to an anxiety which is manifested by an increasing hunger for praise and gross exaggeration of self-accomplishment.

It is this maladjustment to associates at all levels which becomes a chief factor in the "special" assignments successively arranged for these executives. A study of these assignments reveals them unwittingly designed to take the subject from the direct line of reporting and responsibility, to a collateral line where he can work at his special analyses, out of his associates' hair.

*Co-operative ability* is superficially colored by an "eager beaver" type of enthusiasm, but is really poor and spotty. This is particularly true in later years when assignments visualized as important will be sought without consideration of ability. Those considered beneath them are either spurned with resentment or attempted under marked nervous tension. This distinction between desirable and unworthy assignments, always sharp and exaggerated in their minds, becomes in later years magnified beyond any possibility of practical co-operation.

Fear of the "beneath me" assignment is described by a friend of the author's who had assigned to him a "special assistant" typical of the inadequate personality: My friend had called an engineers' meeting at the beginning of which he casually remarked to his assistant, "Joe would you mind taking down a few words of these conversations so we can reconstruct a record?" This was a natural request to which the other men present would not have given second thought, yet

to this assistant it was a matter for great concern. He stuttered, fidgeted, and finally replied: "Frank, couldn't you call in Miss Jones and let her do this?"

In addition to their distorted perspective on assignments, single-mindedness also becomes a major block in cooperative ability. Understanding another's point of view is always difficult for these people, while changing their own is virtually impossible. In their early working years they are partially able to disguise and compensate for this characteristic, but as insecurity increases and emotional agility decreases, a fixed, self-centered viewpoint gradually is encountered.

### Compounding the Loss

*The responsibility-bearing ability* of these inadequate executives, like their co-operative ability, follows a curve which descends with the years. As evidence of their inadequacy increases, ability to make and hold decisions declines to a level at which even minor decisions become cause for major nervous upset. Some years ago I observed an account executive develop increasing nervous tension at the prospect of meeting a client because this executive, without fault of his own, had a disappointing result to report at the meeting. The night before the meeting this man, on complete fabrication of family illness, flew halfway across the continent leaving his subordinate to face the meeting without warning or preparation.

Having looked at the whole picture of the inadequate personality, let us turn to the solution:

The president of a large corporation summed this up, in describing such an employee with whom he had been closely connected—a man employed by this corporation eighteen years, at the end of which he was terminated because of a record similar to those described. During the last four years of his employment he had become so bogged down with phobias of crowds, and height, and closed places, that he had practically been confined to his home. He had continued to work, however, by elaborating devious means of having work and associates brought to his residence. It was not until he was unable to conduct a meeting of his own subordinates that he was terminated.

When asked how in retrospect he



"Good news, G. B., only three 'go soak your head's,' this week."





## The rubber plant that never stops growing

Of course, we're talking about growth that is measured in terms of tremendous productive capacity and versatility—the continuous growth of The Ohio Rubber Company Division of Eagle-Picher.

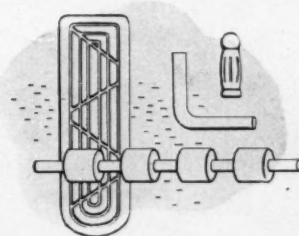
Today, The Ohio Rubber Company supplies thousands of molded, extruded rubber and rubber-to-metal products to all types of industries, including leading manufacturers of automobiles, home appliances, business machines, toys, farm and in-

dustrial equipment. These manufacturers know they can depend on The Ohio Rubber Company for accuracy, for broadly diversified engineering and production services—and for enthusiastic assistance in laboratory and field research on special problems.

Good reasons why Eagle-Picher's Ohio Rubber Company Division continues to grow, and to play a major role in the progress of American industry.

**Molded and extruded rubber products are among hundreds of Eagle-Picher products for homes and broadly diversified basic and growth industries.**

Divisions and principal products . . . OHIO RUBBER COMPANY DIVISION, molded and extruded rubber products—FABRICON PRODUCTS DIVISION, automotive products, plastics, waxed paper and cellophane food wrappers—INSULATION DIVISION, aluminum combination storm windows and doors, mineral wool insulations, diatomaceous earth products—PIGMENT DIVISION, lead and zinc pigments and oxides—MINING & SMELTING DIVISION, zinc, lead, germanium, cadmium. *We welcome opportunities to share our research, production and application experience. Just drop us a line.*



Since 1843

# EAGLE-PICHER

The Eagle-Picher Company • General Offices: Cincinnati 1, Ohio

would treat this same problem, the president of the corporation replied, "The time to have terminated that man was the second time it was found nobody wanted him or could use him without creating a special assignment."

Such a solution may sound callous, but observation of many cases has convinced the author that it is not only the only satisfactory method for the corporation, but also the only kind or satisfactory method for the person himself. Especially is it better for the subject, if early in these problems those upon whom the decision rests realize they are running a corporation and not a clinic.

Consider first the individual: By the time this problem runs its course he has spent his young and formative years with one corporation, and has reached middle-age when the problem is faced. Terminated at this stage he is sent out job hunting with the established reputation of being a failure and a weak sister—and no amount of glossing over in recommendations will alter or minimize this.

No matter how long the subject is kept on (and in this process over-

paid), he himself never recognizes or appreciates these facts. He has no knowledge that he has in effect received nothing but corporate charity. Far from being grateful he is a bitter, disappointed man.

#### Other Alternative

Consider now what early termination would have meant to this man. He is warned in time that all is not as well as he believes, or has been led to think. Trial has proved his supposed qualifications unsatisfactory; aptitude tests while he is still young may reveal areas of actual strength, or may indicate a field which with additional preparation promises him something real to sell.

Personnel and medical counseling to these young men at this period can be of limitless value, whereas later counseling is nothing but a useless and a resented sop.

Consider next the corporation: Monetarily, termination will save \$100,000 or more in salary alone, which would be paid over the years for little or no service. More important, the problem is met before the evil has been compounded for at least a decade, and obligation in-

creased to a size impossible of resolution. The tremendous cost and responsibility to the corporation of these problems is illustrated by the recent comment of a research director concerning the disposition of such an employee.

"John (the subject) is new to me since I took over this directorship three months ago. For years his deficiencies have been obvious to everyone but my predecessor, and when in the last few years even he could no longer escape them, they were always blamed on nervousness. I doubt if John ever produced much before he had his nervous trouble. So now what can I do? Even though he is a dead weight on my group, I can't terminate him, yet neither can I continue to pay him \$25,000 yearly. What I would like to do is to cut his salary to \$10,000, continue his office here, and tell him that from now on until retirement (nine years), he can come or go as he wishes. As a matter of fact I would much prefer that he stayed home."

With such a solution consider on the one hand the cost to the corporation, and on the other the paradoxical emotional devastation of the

employee. Yet high as is the monetary cost of these problems, two other costs are even higher.

First, loss of the training value of the position held by the subject. A fundamental value of any position in a corporation is its potential as an area of training of a good man for something better. *Yet any position held by one of these subjects is not only nullified as a stepping stone, but actually made into an obstacle.*

Second, frustration and nervous strain both to the subject and all his associates. Although these defy measurement they are great enough to be the strongest plea for early recognition and solution of these problems. The most eloquent single proof of this is that approximately 25 per cent of these subjects are eventual suicides. Moreover, it is often impossible to predict which of them have this potentiality.

The personnel director of a large oil company describes a letter received from one of these employees, on leave of absence with choice between returning to work or termination problematical. In this letter the subject described glowingly his vacation and its benefits to his phys-

### *Campbell SOUP Company* SACRAMENTO, CALIFORNIA

New plant addition, increasing productive floor space by 275,000 sq. ft., consists of new plant office building (right) with general offices on ground floor, plant cafeteria and locker rooms on second floor. The four-story building in the background houses the refrigerated warehouse, receiving and vegetable preparation.

Lockwood Greene have completed the design of a new food products plant for this client, to be built at Napoleon, Ohio.

## LOCKWOOD GREENE

ENGINEERS-ARCHITECTS

Boston 9, Mass.  
40 Central Street

New York 17, N. Y.  
41 East 42nd Street

Spartanburg, S. C.  
Montgomery Building

OVER A CENTURY OF INDUSTRIAL PLANT DESIGN EXPERIENCE

Brochure available on request





## NOW! Eliminate losses due to truck breakdowns!

**YOU** know what truck breakdowns mean. Costly interruption of your deliveries. Costly repair bills. Costly headaches. Why not

avoid them with convenient Hertz Truck Lease Service, the oldest, largest truck leasing organization with 31 years' experience?

### HOW HERTZ TRUCK LEASE SERVICE CAN HELP YOU

**More and more American businesses**, including manufacturers, wholesalers, distributors, retailers, restaurants, laundries, cleaners and dyers, department stores, grocers, specialty shops and many more, are using Hertz Truck Lease Service, leasing one truck, whole fleets—or supplementing company-owned fleets with additional trucks from Hertz. Their reasons are as sound as a dollar.

**Releases your capital investment in trucks.** It's our money tied up in trucks . . . not yours. Your money stays where it will do you the most good—right in your own business. If you prefer, we can arrange to buy your present fleet of trucks at mutually agreed prices, and lease them to you if they fit your needs. When necessary, we replace old, worn-out trucks with new Fords or other sturdy trucks.

**Avoids maintenance headaches.** Hertz services, fuels all trucks it leases to you. The Hertz Truck Lease Service is a *complete* service. We furnish everything but the driver. That's why the Hertz Truck Lease Service gives you all the advantages of private ownership—but none of its disadvantages.

**Avoids waste of idle trucks.** You lease only the minimum number of trucks you'll need because we can furnish additional expertly maintained trucks in a hurry in case of peak loads or emergencies. No need to carry idle trucks on

your cost sheets as you must do when you maintain company-owned fleets.

**Saves bookkeeping.** With Hertz Truck Lease Service you get only one periodic billing from Hertz. It saves you the time and expense of keeping reports and cost sheets of numerous items for servicing, gasoline and oil, repairs, etc.

**For your protection,** Hertz also insures all trucks to meet your needs and requirements. We will place the insurance through your broker, if you prefer.

**We engineer the trucks** to your needs and Hertz Truck Lease Service is most flexible. We can set it up in any way most convenient and most suitable to you.

**And remember,** your trucks will always look smart, clean, attractive . . . add prestige to your company.

**Call your Hertz representative** for a free survey of your trucking problems today. There's no charge or obligation. You'll find Hertz Truck Lease Service listed under "H" in your phone book. Or write: Hertz Truck Rental System, Department H85, 218 South Wabash Avenue, Chicago 4, Illinois. Phone: WEBster 9-5165.



## HERTZ Truck Rental SYSTEM

Need a car? Hertz has them, too! Low rate includes gasoline, oil and proper insurance. Call your local Hertz office.

# "Design it better — make it better"

## is the way BORG-WARNER serves the Aircraft and Guided Missile Fields

With its vast reservoir of engineering skills and production facilities, Borg-Warner today plays an increasingly important role in the aircraft industry. Essential B-W components and related accessories are used in aircraft, guided missiles, launching equipment, ground handling equipment and transportation equipment. And back of every part is the B-W tradition, "Design it better—make it better." In this way Borg-Warner aids the aircraft industry in its vital national defense efforts.

### B-W Products for the Aircraft Industry

Hydraulic systems, pumps, valves, motors  
Jet fuel and booster pumps  
Pneumatic control units and electro-mechanical actuators and valves  
Airframe components and assemblies  
Aircraft engine carburetors  
Nuclear radiation detection apparatus, electronic measuring equipment, analyzers, amplifiers, spectrometer and instruments  
Universal joints, speed controls, one-way clutches, flexible couplings  
Small arms ammunition clips and links

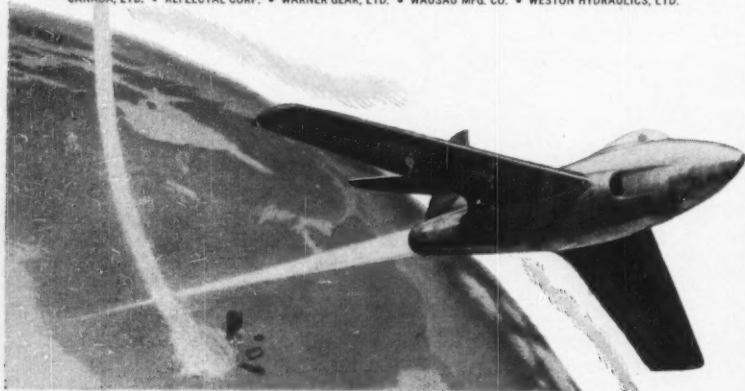
Electric motors, air pumps and related accessories  
Rocket components, Jatos and boosters  
Jettisonable wing tanks  
Special purpose steels—stainless, clad, armor, special alloy  
Adhesives, resins, Cocolac  
Specialty saws and files for cutting high tensile strength metals  
Related accessories for ground handling and transportation equipment

Almost every American benefits every day from the 185 products made by

**BORG-WARNER**



THESE UNITS FORM BORG-WARNER, Executive Offices, 310 S. Michigan Ave., Chicago.  
DIVISIONS: ATKINS SAW • BORG & BECK • CALUMET STEEL • DETROIT GEAR • FRANKLIN STEEL • HYDRALINE PRODUCTS • INGERSOLL CONDITIONED AIR • INGERSOLL KALAMAZOO • INGERSOLL PRODUCTS • INGERSOLL STEEL LONG MANUFACTURING • MARBON CHEMICAL • MARVEL SCHEBLER PRODUCTS • MECHANICS UNIVERSAL JOINT • NORGE PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR WOOSTER DIVISION • SUBSIDIARIES: BORG-WARNER ACCEPTANCE CORP. • BORG-WARNER INTERNATIONAL BORG-WARNER, LTD. • BORG-WARNER SERVICE PARTS • LONG MFG. LTD. • MORSE CHAIN • MORSE CHAIN OF CANADA, LTD. • REFLECTAL CORP. • WARNER GEAR, LTD. • WAUSAU MFG. CO. • WESTON HYDRAULICS, LTD.



ical and nervous health. Hope was expressed that he would return to work the following week, more efficient than in many years, yet two days later and without further word to his office, he died from an over-dose of barbiturates.

### What Can Happen

Both these factors, loss of training value of the positions held by these executives, and nervous and physical devastation wrought by them, are illustrated in the following case:

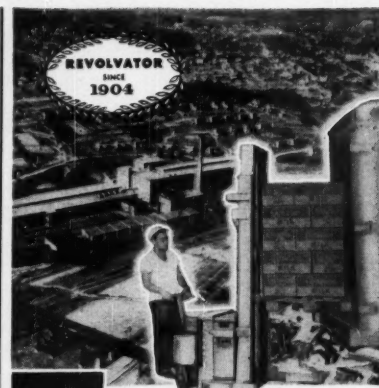
Fred Smith was an employee of a large corporation when this corporation purchased the business of which he had been a partner. In his new position he reported to a man of inadequate personality—a fellow of notoriously violent disposition and temper. Fred soon perceived and applied for an important project for which his experience gave him excellent background. I quote his description of his supervisor's reply to this proposal. "I want you to understand that as long as you report to me you will remain on your present assignment, with no salary increases."

My friend describes the result as follows: "That man caused me eight terribly unhappy years, and also cost the corporation all accomplishment of which I was capable during those years." The staggering price of this executive to the corporation is further emphasized by two resignations and two near physical breakdowns which occurred in his area during those eight years. The man himself was finally (age 54) given a substantial demotion, which was followed in three months by his complete invalidism from coronary thrombosis.

Let us consider a method for rec-



"My doctor says I need a bobby, Kenworth... take care of it for me."



### YOU BENEFIT...

By Over 50 Years of Diversified experience.

Revolver Go-Getter Lift Trucks have been used to solve a great range of materials handling problems. Quiet, smooth, powerful operation; easy maneuverability; the freedom from heavy maintenance; overall simplicity of construction of these Revolver Go-Getters have made the name Revolver synonymous with peak efficiency in materials handling.

Today write for full information.

Wherever narrow aisles and high stacking is required.



High Lift Go-Getter — a real brute for work.

**REVOLVATOR CO.**  
8702 Tonnelle Ave., No. Bergen, N. J.

No. 14 in a series

**BATON**

builds for

**Sears Roebuck and Company**



**Baton Construction Corp.**  
PHILADELPHIA

*Louis J. Glickman*

REALTY INVESTMENTS  
565 FIFTH AVENUE • NEW YORK 17, N. Y.

### Management

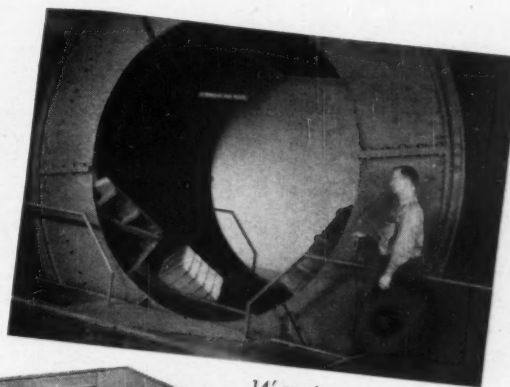
### Responsibility

Increased profits and improved productivity can be obtained through advanced materials handling. "Better Handling" appearing in the September issue of DR&MI reviews the challenge every management man must meet. Be sure to read it.

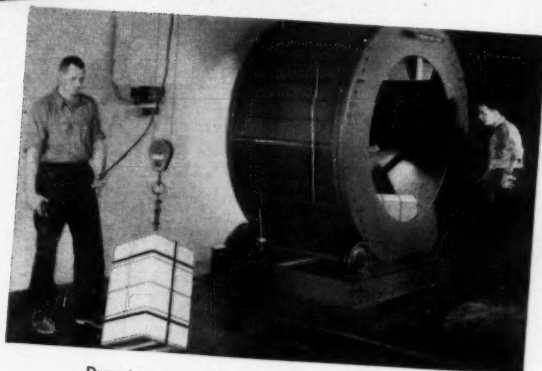




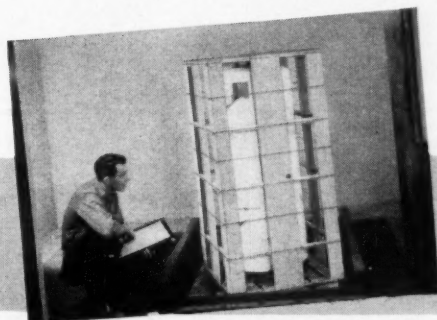
Incline  
impact  
tester



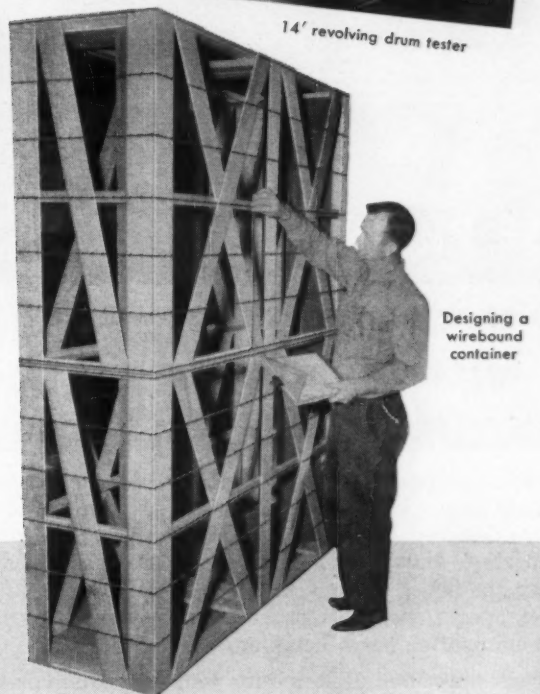
14' revolving drum tester



Drop tester and 7' revolving drum tester



Vibration tester



Designing a  
wirebound  
container

## General Box behavior clinic for shipping containers

When General Box designs and tests a container for your product, there's little room left for guesswork about its behavior. Some of the reasons are illustrated above. How it will handle in your plant, how it will pack, how it will ship, and how it will arrive and unpack are all considered.

General Box design engineers know the importance to you of every possible saving in packing, shipping, and direct container costs. And every month they design containers for all kinds of things—machine tools that weigh several tons . . . "hard to pack" products like radar an-

tenna . . . major appliances . . . component parts in bulk.

Whether you believe the best container for your product will be a toughie or a snap to design, it will pay you to find out what the General Box answer is. It's easy to do—just let us send a man. No obligation. Write for your copy of the "Heavy Duty" issue of "General Box."

Factories: Cincinnati; Denville, N. J.; East St. Louis; Detroit; Kansas City; Louisville; Milwaukee; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

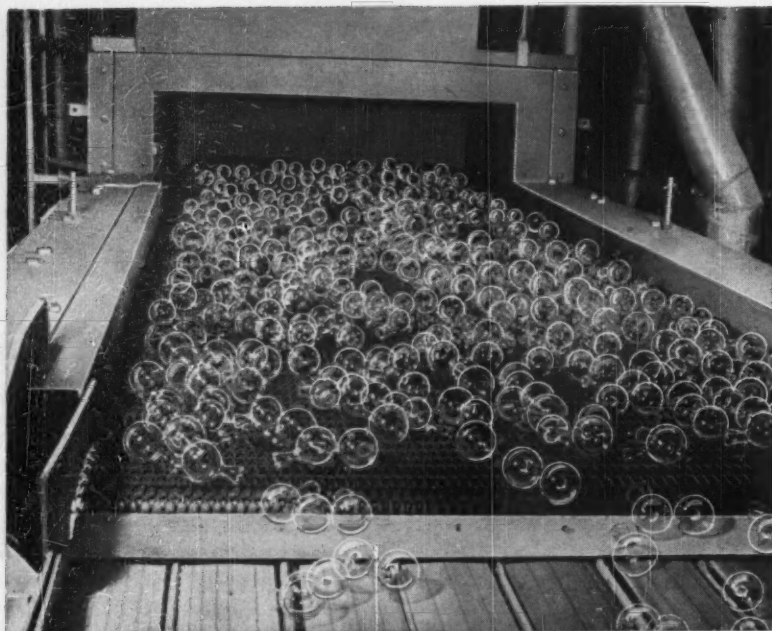
### Engineered Containers for Every Shipping Need

• Wirebound Crates and Boxes • Generalift Pallet Boxes • Corrugated Fiber Boxes • Cleated Corrugated and Watkins-Type Boxes • Stitched Panel Crates • All-bound Boxes

# General Box

1813 Miner Street, Des Plaines, Ill.





## INCREASE PRODUCT UNIFORMITY

combine movement and processing

WITH *Cambridge*

### WOVEN WIRE CONVEYOR BELTS

By providing continuous processing at controlled speeds, woven wire conveyor belts help assure consistent uniformity in your products. All-metal belts are designed for almost any purpose, whether you're processing unit parts or bulk, at 2000° F or sub-zero temperatures, using wet or dry methods. Whatever you manufacture—glass or ceramic ware, metal parts, chemicals, or foods—woven wire belts help you cut costs by eliminating batch handling.

Cambridge belts are individually selected for your installation from a wide range of specifications. The metal or alloy from which they are woven is specially selected to give longest life under the temperatures or corrosive conditions of your processing. Open mesh provides free flow of process solutions and atmospheres, cannot trap spilled materials. Uniform continuous construction minimizes uneven wear, localized weakening and costly shutdowns.

No matter how you look at it, CAMBRIDGE Woven Wire Conveyor Belts are invaluable aids to AUTOMATION . . . help give you more uniform products and beat your biggest competition, COST.

Ask your Design Department to call in your Cambridge Field Engineer to study your processing and discuss ways of increasing uniformity of your products and cutting costs by combining movement with processing. Your engineers can rely on his advice. The Cambridge man nearest you is listed under "Belting, Mechanical" in your classified telephone book.

Write for your PERSONAL COPY of 130-PAGE REFERENCE MANUAL illustrating and describing woven wire conveyor belts. Gives mesh specifications, design information and metallurgical data.



## The Cambridge Wire Cloth Co.

WIRE CLOTH

METAL CONVEYOR BELTS

SPECIAL METAL FABRICATIONS

DEPARTMENT Y,  
CAMBRIDGE 8,  
MARYLAND

OFFICES IN PRINCIPAL INDUSTRIAL CITIES

ognizing these executives before the damage is accomplished and they themselves sacrificed; a condensation of their characteristics (found on page 45) gives a scoring criterion, which applied to your early suspect can tell you accurately whether or not he is a potential problem.

### Consider Lookalikes

It should be noted in using this outline as a diagnostic measure, that one frequently encounters nervous, high strung individuals not actually of inadequate personality, although showing many of the above characteristics. *Differentiation here lies in the areas of production, co-operation, and responsibility.* When these are average or above, the total personality is *not* inadequate even though other areas coincide with the outline. *The employee, however, below average in these three fields, is a certain problem candidate,* and when these three qualifications fit, most or all of the other areas of the diagram will likewise fit.

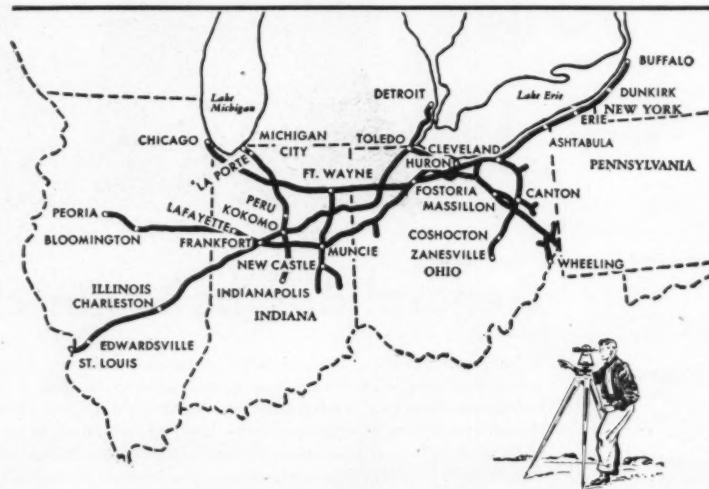
The question arises in what area lies responsibility of recognizing and dealing with the inadequate

personality—management, medical, or personnel. In each of these cases some responsibility will fall in all these areas, but in all cases major responsibility, particularly for solution, lies with management. Although medical and personnel departments can and should advise concerning both diagnosis and treatment of these problems, responsibility rests with management.

Full-blown, inadequate personality problems are easily recognized but almost impossibly solved. They are the result of a problem handled with initial ignorance and subsequent avoidance and procrastination by an older management generation, and finally handed to a younger generation for solution. The fact that this employee must finally be dealt with by one of his own contemporaries or even frequently a former junior, is only an added emotional difficulty.

Perhaps the most unfortunate aspect of this whole problem is that present management, while forced to recognize its own full-blown legacy, is unwittingly nurturing identical early problems to be handed down to future management.

THE END



### LOOKING FOR INDUSTRIAL SITES?

Let "Nick Plate" send you our detailed and accurate "Along the Line" surveys covering natural and agricultural resources, utilities, labor and other pertinent data relating to each specific location. Just tell us the area or type of location you are interested in. Call or write:

H. H. Hampton, NICKEL PLATE ROAD  
1407 Terminal Tower, Cleveland 1, Ohio  
Phone: MAin 1-9000





**you're invited...**  
**During the Machine Tool Builders Show**

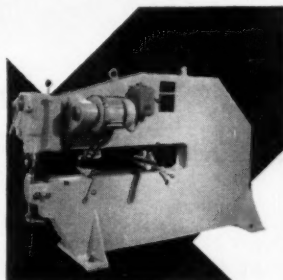


**to visit the BIG DEMONSTRATION ROOM of AMERICAN PULLMAX**  
**when you come to Chicago—2455 N. Sheffield Avenue, Chicago, Illinois**

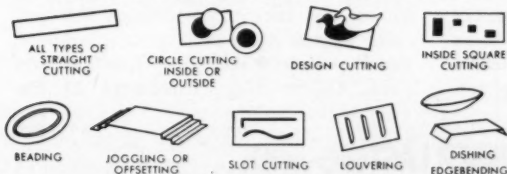
**you'll be AMAZED at what  
 PULLMAX does in metalworking**

**1 machine can do  
 all these jobs  
 in your shop**

Ask any Pullmax user and he'll usually say, "I don't know how we ever got along without it." 7 sizes of Pullmax cut mild steel up to 1 1/2". Pullmax does all the jobs shown here and generally pays for itself in three or four months by saving time, labor and material.



**PULLMAX DOES ALL THIS WORK**



If you're coming to Chicago for the Machine Tool Builders Show, the Coliseum Machinery Show or the Production Engineering Show from September 6 to 17, don't fail to visit Pullmax.

We'll have an exhibit at the Coliseum (Booth 120), but we want you to visit our big display and demonstration rooms at 2455 N. Sheffield Ave.

See all of the different Pullmax machines, the largest line of its kind in the World Market. See them demonstrated (or operate them yourself). See them work all gauges and types of metal (or bring your own job in to have it done on a Pullmax.)

Find out for yourself why everyone's saying this is the most amazing metalworking machine they've ever seen.

**Pullmax Machines on Display at Booth 120  
 Coliseum Machinery Show, Sept. 6 to 17  
 Write for Tickets and Literature Today!**

**COURTESY CAR FROM LOOP HOTELS**

Just call Dlversey 8-5727 and one of our courtesy cars will pick you up at your hotel and return you after you've seen the Pullmax machines.



**AMERICAN PULLMAX COMPANY, INC.**

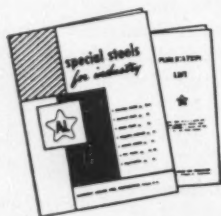
2483 NORTH SHEFFIELD AVENUE

CHICAGO 14, ILLINOIS

**NO MODERN SHEET METAL, MAINTENANCE OR ENGINEERING DEPARTMENT  
 IS COMPLETE OR PROPERLY EQUIPPED WITHOUT A PULLMAX MACHINE**



Dollars of **FIRST COST** aren't so big...  
if they're the **LAST COST**



**WRITE TODAY**  
**For These Publications**

1. **SPECIAL STEELS FOR INDUSTRY** . . . 16 pages of essential data on the proper selection and application of principal AL special alloy products: stainless, tool and electrical steels and sintered carbides.

2. **PUBLICATION LIST** . . . a complete listing of all AL publications, both technical and nontechnical (over 100 in all), with a handy order form for your convenience.

ADDRESS DEPT. DR-68

First cost isn't everything! What really counts in most cases is not how much a thing costs when new, but how long it lasts; how *little* it actually costs when reckoned in terms of extra years of service.

That is where AL Stainless jumps to the head of the class. Stainless steel is a package of built-in advantages you just can't match anywhere else. No other commercial material is at once as hard, strong and

lastingly beautiful — as resistant to heat, wear and corrosion — as easy and inexpensive to clean and maintain.

To top it off, AL Stainless is easy to fabricate, and we produce it in every shape or form a fabricator may require. Check up on its money-making possibilities for *you*, either in your products or your equipment, *and let us help!* • **Allegheny Ludlum Steel Corp., Oliver Bldg., Pittsburgh 22, Pa.**

W&D 5483 B

Make it **BETTER**-and **LONGER LASTING**-with

**AL Stainless Steel**

Warehouse stocks carried by all Ryerson Steel plants





# Executive BOOKSHELF

## On the Mark

**TRADEMARK MANAGEMENT: A GUIDE FOR BUSINESSMEN**, by the Trademark Management Committee. The United States Trademark Association, 522 Fifth Avenue, New York 36, N.Y., 130 pages, \$5.

A rose by any other name may smell as sweet, but a product with an improper trademark will languish like a wilted lily. Besides demonstrating the steps to be taken in choosing a forceful, selling trademark, this book, which was written for business men, not lawyers, considers the problems of registration, correct use, protection, and foreign markets.

Although a trademark can be developed into an invaluable company asset, it is a delicate thing which can be easily destroyed through improper use. How does one popularize a product name so that it becomes a household word without actually becoming a generic term and passing into the language? The authors provide the answer in discussing the loss of such former trademarks as "aspirin," "escalator," and "cellophane." Included are samples of letters and forms used by various corporations in protecting trademarks.

## To Sell Salesmen

**HOW TO MAKE YOUR SALES MEETINGS SELL**, by Edward J. Hegarty. McGraw-Hill Book Company, 330 West 42nd Street, New York 36, N.Y., 303 pages, \$4.

The director of sales training for Westinghouse's Electrical Appliance Division opens his bag of tricks which he has accumulated during the last four decades. He insists that a sales meeting, large or small, is really a group sale by which the manager hopes to sell his salesmen on some particular course of action. And as with all selling, the key factor is the creation and presentation of ideas.

The book includes hundreds of result-producing techniques and props for sales staffs of various sizes, and demonstrates how to plant your message in the minds of your salesmen so that it will stick

like a catchy tune. Among the topics treated are role-playing, visual aids, audience participation, and many other techniques for putting your salesmen to work rather than to sleep.

## What's Ahead?

**THE FUTURE OF AMERICAN PROSPERITY**, by Philip Wernette. The Macmillan Company, 60 Fifth Avenue, New York 11, N.Y., 262 pages, \$4.50.

Not just another primer in economics for the citizen, this valuable volume is an informed yet informal inspection of our prosperity. Written in a lively manner so that the busy business man can easily find his way through the maze of monetary economics, it is an appropriate answer to the Cassandra who insist that prosperity is too good to last.

The author, who is a professor at the University of Michigan and editor of the *Michigan Business Review*, is not a Pollyanna, who thinks that prosperity automatically accompanies population growth. Rather, he demonstrates, primarily in terms of changes in the volume of money, how economic shifts occur and can be prevented or, at least, ameliorated. He concludes that with moderate efforts we can more than double real income per family within the lifetime of most Americans.

## Tools for Cost-Cutters

**TESTED APPROACHES TO CUTTING PRODUCTION COSTS**. American Management Association, 330 West 42nd Street, New York 36, N.Y., 128 pages, \$3.75.

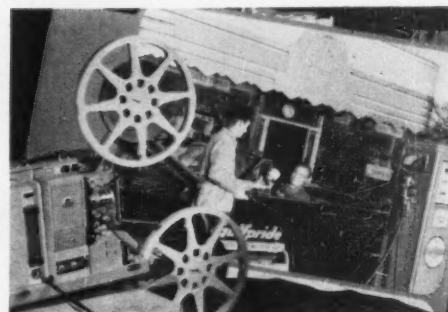
How can you cut costs without reducing efficiency? When can costs be allowed to rise so as to produce long-term savings? What are some yardsticks for determining whether and where costs are out of line?

These and many other questions are considered in this collection of fourteen papers which were presented at an AMA conference in Cleveland last January. Among the areas considered for cost cutting

## Which of these sales jobs can MOVIES help you do?

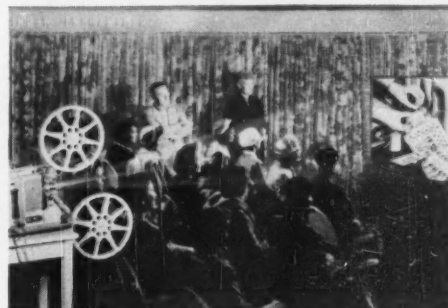
### TEACHING DEALERS TO SELL

The Gulf Oil Corporation must constantly bring its thousands of dealers up to date on product improvements and selling methods. Gulf does it easily and economically with movies. This training is well received, too—dramatization makes sales points convincing and easy to remember; demonstration shows how service pays off in profits.



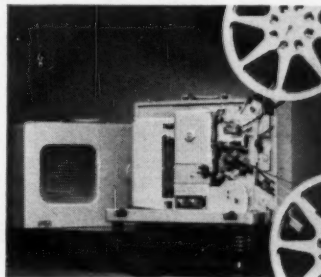
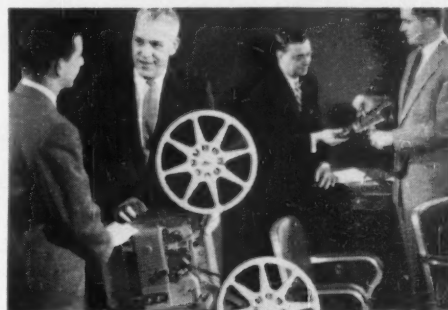
### SLASHING SALES COSTS

Consolidated Trimming Corporation's traveling demonstrators once held home-decorating clinics in department stores throughout the country. But to cut costs and still keep the effective "Here's-how-to-do-it" approach, the company recently wrapped its demonstration into a movie. A welcome extra reward was an upsurge in sales!



### SHARPENING DISTRIBUTOR ENTHUSIASM

The Thor Power Tool Company tried several methods of keeping its 4000 distributors informed and excited about its 1500 products. Then Thor found that "homemade" movies do it better and for less cost than any other way. The high enthusiasm Thor's movies have created has actually paid off measurably in improved sales performance.



### BOOKLET HELPS YOU DECIDE

This free booklet, "Motion Pictures: Aids in Business and Education," can help you decide how 16mm. movies can help you. It discusses applications, planning, production costs, presentation, and effectiveness of business and industrial movies. References and sources of loan films are included. Just mail the coupon.



### HOW TO PICK A PROJECTOR

Salesmen need projectors that keep audience interest alive with crisp, brilliant pictures... and put the audience at ease with clear, comfortable sound. Their projectors must be easy to carry, easy to set up, and easy to run. And salesmen also need reliable projectors so that breakdowns won't spoil presentations miles away from service facilities.

That's why the companies mentioned above—like so many others—have selected Kodascope Pageant Sound Projectors. Only Pageants are permanently pre-lubricated to eliminate the danger of improper oiling—chief cause of projector breakdowns.

For more details to help you pick your projector, just check the coupon for your free copy of a new catalog on the complete Pageant line.

### EASTMAN KODAK COMPANY

Dept. 8-V, Rochester 4, N. Y.

8-4

Please send me without cost or obligation:

- ☐ "Motion Pictures: Aids in Business and Education"
- ☐ New catalog on Kodascope Pageant 16mm. Sound Projectors

NAME \_\_\_\_\_

POSITION \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_

(Zone)

STATE \_\_\_\_\_

**Kodak**  
TRADE-MARK

## how to REDUCE LOADING COSTS...



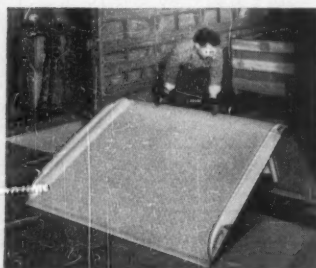
## ACROSS THE BOARD!

The day you drop a Magliner magnesium dock board into place on your loading dock you've started saving money *right across the board!* Loading bottlenecks in shipping-receiving quickly disappear, and dock traffic starts rolling rapidly and efficiently.

With Magliner dock boards you get more output from your loading equipment. Power trucks, floor trucks and other equipment do a full day's work because Magliners are custom-engineered to meet the exact requirements of your dock . . . your equipment . . . *plus* any special conditions which may affect your loading operation.

Magliner dock boards protect your loads and equipment against costly damage . . . insure greater safety for your men. Made of light, strong magnesium, they're easily handled by one man! No heavy lifting or risk of injury.

You owe it to yourself to find out how you can reduce costs *across the board* —across a Magliner dock board! Write for the facts today.



*In Canada, Magline of Canada, Limited, Renfrew, Ontario.*

were materials handling, indirect labor, purchasing, maintenance, inventory control, traffic, and paperwork. In addition to check-lists and forms, the book lists tested techniques which have worked in many plants, both large and small.

### Atom Fuels

**MATERIALS FOR NUCLEAR POWER REACTORS**, by Henry H. Hausner and Stanley B. Roboff. Reinhold Publishing Corporation, 430 Park Avenue, New York 22, N.Y., 224 pages, \$3.50.

This pocket-size handbook in layman's language provides a summary of the many developments in the field. Executives as well as engineers will value this book as a follow-up to the recent article, "Fitting Your Product to the Atomic Age" (January and February 1955, *DUN'S REVIEW AND MODERN INDUSTRY*).

### Footprints in the Sands

For relaxing vacation-time reading, for the unusual gift, or for refurbishing one's understanding of American society, it would be difficult to recommend a better set of books than the new Library of American Biography.

Brief but not superficial, scholarly but not stiff, these nine delightfully written volumes are each the handiwork of a leading authority in each field. Each historical figure is re-created as a living personality through whom we can understand the temper of his time. Edited by historian Oscar Handlin of Harvard, the books are uniformly bound, sell for \$3 each, and are published by Little Brown and Company, 34 Beacon Street, Boston 6, Mass.

**DANIEL WEBSTER AND THE RISE OF NATIONAL CONSERVATISM** by Richard N. Current, 215 pages.

**ELISHA KENT KANE AND THE SEAFARING FRONTIER** by Jeannette Mirsky, 201 pages.

**SAMUEL F. B. MORSE AND AMERICAN DEMOCRATIC ART** by Oliver Larkin, 215 pages.

**ELIHU ROOT AND THE CONSERVATIVE TRADITION** by Richard W. Leopold, 222 pages.

**U. S. GRANT AND THE AMERICAN MILITARY TRADITION** by Bruce Catton, 210 pages.

**WILLIAM H. WELCH AND THE RISE OF MODERN MEDICINE** by Donald Fleming, 216 pages.

**BENJAMIN FRANKLIN AND A RISING PEOPLE** by Verner W. Crane, 219 pages.

**WILLIAM LLOYD GARRISON AND THE HUMANITARIAN REFORMERS** by Russell B. Nye, 215 pages.

**BOOKER T. WASHINGTON AND THE NEGRO'S PLACE IN AMERICAN LIFE** by Samuel R. Spencer, 212 pages.



## MARSHIAN TAPER LICKS HERSHEY CHOCOLATE SHIPPING PROBLEM

Hershey Chocolate Company's packaging operations have been speeded up with Marsh Electric gummed tape dispensing machines. They're called "DIAL-TAPERS" because you just dial the tape length needed. Tape is measured accurately, moistened with warm water, and cut off clean, ready to seal with one pass of the hands. Users save up to 25% in tape . . . 50% in time with the Marsh Electric DIAL-TAPER. It's amazing.

**FREE:** "The Marshian Story" of Electric Taping. Clip ad to business letterhead with your name. Mail Today! MARSH STENCIL MACHINE COMPANY, 62 Marsh Building, Belleville, Illinois U. S. A. DT-16

**MARSH** ELECTRIC  
DIAL TAPER

No. 19 in a series

## BATON

builds for

**E. J. Lavino  
and Company**



**Baton Construction Corp.  
PHILADELPHIA**

## Are you looking for a PUBLISHER?

If so, send for our free, illustrated booklet titled *To the Author in Search of a Publisher*. Tells how we can publish, promote and distribute your book. All subjects considered. New authors welcome. Write today for Booklet DR. It's free.  
**VANTAGE PRESS, Inc., 120 W. 31 St., N. Y. 1**  
In Calif: 6263 Hollywood Blvd., Hollywood 28  
In Wash., D. C.: 1010 Vermont Ave., N.W.

### Materials

### Handling

Don't miss "Better Handling" in the September issue of *DR&MI*.

This provocative feature reveals the challenge management must meet if productivity is to be improved and profits increased.



**GOING PLACES** *underground  
with Cities Service...*

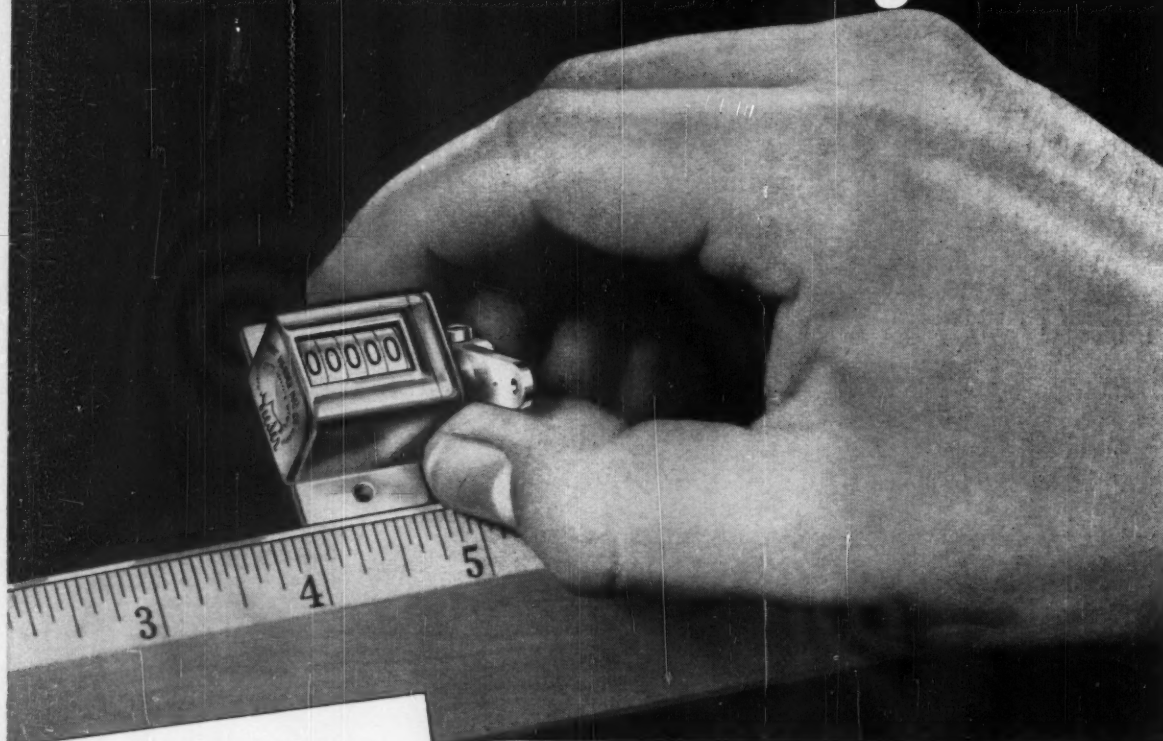


Cities Service transported more oil through more miles of pipeline in 1954 than ever before in Company history. Reason for this bustling underground activity—more Cities Service customers than ever before in Company history!

**CITIES  SERVICE**  
*A Growth Company*

Number 11 of a series

# This Small Counter Does a Whale of a Big Job!...



*Added Evidence  
that —*

**Everyone Can Count on  
VEEDER-ROOT**

For its size . . . *less than one inch square* . . . this Veeder-Root Small Square-Case Counter is the most rugged instrument of its type, with the longest accurate life. And only Veeder-Root makes it this way . . . square all the way through . . . extra strength built-in, with bearing surfaces on *both* ends of the drive shaft.

What's more, this counter is 100% American  
... made by Connecticut craftsmen to unmatched

standards of quality and precision. And it's the "counter of countless uses" . . . built into everything from office machines and cameras to taxi meters and voting machines. Now what do *you* make that could count its way to bigger sales and profits with a Small Square-Case Counter built-in as a standard part? Write:

**VEEDER-ROOT INCORPORATED  
HARTFORD 2, CONNECTICUT**

Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.  
Montreal 2, Canada • Dundee, Scotland  
Offices and Agents in Principal Cities



*"The Name  
that Counts"*



## NEW METHODS AND MATERIALS

# LP GAS for heat and power

## New materials for strength and durability

### Better fuel for production

It made its debut in industry as a standby fuel. But LP gas is now taking over as a primary energy source in ceramic and plastics production, metalworking and product finishing. It's used as a fuel for industrial trucks (see page 62). It's becoming an important chemical raw material, too.

LP (liquified petroleum) gas has many advantages. This butane-propane fuel is an engineered energy source that lends itself to precise control and to automatic operation. It can be stored—for long periods if necessary—at point of use so that it is ready to go to work at the turn of a valve.

LP gas burns completely with little or no fouling of engines and cylinders. That means lower maintenance costs, less-frequent oil changes, and longer engine life.

Small wonder that makers of everything from gas ranges to industrial trucks are designing new equipment to use LP gas as a fuel; and that processors are putting it to work as a primary source of heat and energy in their plants.

For best results, it is important that equipment be specifically adjusted for LP use. This gas differs from other fuels in several respects:

LP gas requires no "anti-knock" compounds. It burns hotter and more completely (though more slowly) than gasoline and makes more power available. It poses some new problems in handling.

These differences do not mean, of course, that LP gas can't substitute for other fuels. As mentioned above, its first industrial applications were in standby units—to take

over when natural gas supply was cut off or electricity failed. But no fuel can do its best unless equipment is adjusted for it.

For field conversions of tractors and similar vehicles, LP gas manufacturers recommend that compression ratios be increased, spark timing adjusted, and calibrated carburation installed. A cold intake manifold is also desirable so that more gas can be drawn into the cylinders. (Gas expands when heated, so the cooler it is, the more dense it will be, and the more can be drawn in at one time.)

When these changes are made, LP gas will more than live up to the claim of its suppliers: a better fuel, for longer equipment life and lower operating cost.



Flame-sprayed ceramics may help break industrial as well as military thermal barriers. In new Norton process, pure oxide rod is fed through modified metallizing gun. Deposition can be manual, as here, or automatic.

### New ceramics to beat the heat

With high temperatures now a problem in everything from computers to chemical processing, new heat-resistant ceramic coatings rate close attention.

Within the past month, Armour Research Foundation, Norton Company, and the National Bureau of Standards have unveiled new ways to apply refractory overlays on a variety of base materials, including stainless steel and graphite.

The Norton process is a flame-spraying technique, using a modified metallizing gun through which the coating material—in rod form

## There is NO FINER WAY

to thank your

employees . . .



for the years of service given to your organization.

The Service Award, together with your kind words and warm handshake give public recognition of the esteem in which you hold your veteran employee.

Records prove that Service Awards cement better relations between employee and the employer—reduce labor turnover and absenteeism—improve production quality and public relations.

Here is your opportunity to secure these mutual benefits for your company.

Fill out and mail the coupon today. Our literature and services are offered without charge or obligation.



**METAL ARTS COMPANY**  
742 Portland Avenue • Dept. No. 45  
ROCHESTER 8, NEW YORK

**METAL ARTS COMPANY • Dept. No. 45**  
742 Portland Avenue • Rochester 8, N. Y.

Please check the following:

- ☐ I am interested in the free Brochure
- ☐ I would like your representative to call
- ☐ I would like more information about your free planning and art service.

Name: .....

Title: .....

Firm: .....

Address: .....

City, State: .....

# POSITIVE RIGIDITY

... recommended  
for all office  
machines ...  
ESSENTIAL  
for  
electronic  
machines!

**Cramer**  
**GUARDIAN**



IN  
4 SIZES



28" height:  
24x20" top.



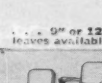
28" height:  
20x17" top.



29" height:  
24x20" top.



35" height:  
20x17" top.



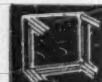
... 9" or 12"  
leaves available

## OFFICE MACHINE TABLE-STANDS

Engineered to the rigid requirements of today's complex office machines, these new Guardian table stands by Cramer of Kansas City safeguard your investment in costly machines by holding them rigidly in place for accurate and trouble-free operation. Famous Cramer anchor-cups on each leg grip floor securely, and a handy lever releases the silent retractable casters for easy rolling of stand and machine when desired. Quality-constructed of square-tube steel with smooth tops of 3/4" plywood ... designed to complement the decor of the modern office.

Made by the Makers of Cramer Posture Chairs

Ask your Cramer dealer  
write Dept. DR  
CRAMER POSTURE CHAIR CO. INC., 1205 Charlotte, Kansas City 6, Mo.



WELD-BRACED  
TOPS & LEGS  
STAY RIGID

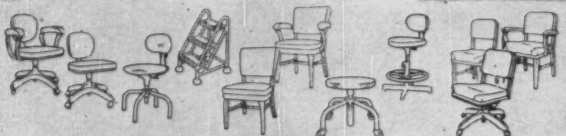


NEW LEAF LOCK  
CANNOT RELEASE  
ACCIDENTALLY



LEVELING DEVICES  
ASSURE STABILITY  
ON ANY SURFACE

ALL MADE BY  
**Cramer**  
OF  
KANSAS CITY



## Business Cards that Open Doors

Is your card a wall, or a bridge, between salesman and prospect? Smart design, quality raised-letter cards woo receptionists and create a favorable first impression. Fine cards cost little more, are made by Hill. National companies with many salesmen use Hill cards. Coupon order plan saves money for users of 5,000 cards a year. Write for folder now, give annual usage.

If it's worth seeing, put it on a Hill

**R.O.H. HILL, INC.**  
Fine Business Cards and Letterheads  
270 D-2 Lafayette St., N. Y. 12, N. Y.

No. 12 in a series



**BATON**  
builds for  
**The Budd Company**

★  
**Baton Construction Corp.**  
PHILADELPHIA

Not science fiction, but the down-to-earth problem that faces management to obtain quicker and better control of business information. Read "How Much Automation for the Office" in the October issue of DR&MI.

Automated Offices  
Integrated Data Processing  
Electronic Brains  
TWX Transmission

## NEW METHODS

—is fed. Aluminum oxide, zirconium oxide, and silicon carbide have been successfully deposited this way (the latter, only on graphite), and Norton believes the process can be applied to several other materials. Coatings can range from less than 0.010 to about 0.100 inch in thickness, and, Norton says, can be held to close tolerances. They are somewhat porous (8 to 12 per cent), but have excellent corrosion resistance and good mechanical properties. They will stand temperatures to, and even above, 3,000° fahrenheit, though the base material need not be heated above 800° during deposition.

Although aimed originally at providing protection for rocket, guided missile, and gas turbine parts, Norton believes the coatings will find plenty of applications in oil burner parts, electrical equipment, and other industrial products.

The spray guns are being made commercially, and Norton is licensing use of the coating process and supplying the ceramic rods.

The Armour Research Foundation process is also a flame-spraying

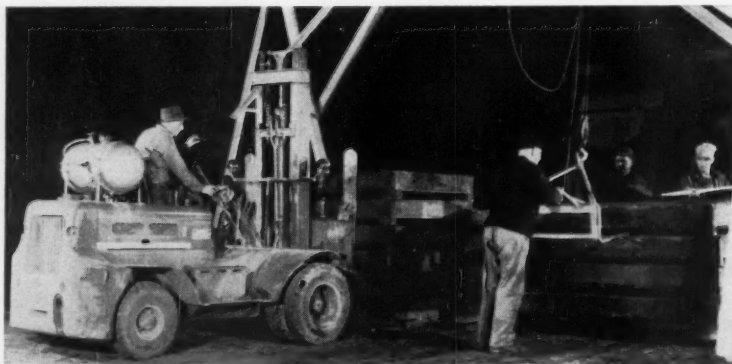
technique. But here, the ceramic materials (alumina and zirconia) are used in powdered form. Coatings are generally less than 10 mils thick. Porosity is said to be 10 to 15 per cent. This process, too, is being licensed for industrial use. Continental Coatings Corporation of Chicago has the primary license in the contract applicator field.

The National Bureau of Standards is working with metal ceramics rather than pure oxides, and aiming at operating temperatures of about 1,500° fahrenheit. Instead of flame-spraying, it uses regular ceramic-coating methods.

A metal-ceramic mixture (chromium-nickel-boron, for instance) is combined with a ceramic frit and applied by dipping or spraying at room temperature. It is then fired at its melting point—in this case, 1,900° fahrenheit.

For cermet coatings, the Bureau says, this method is superior to flame-spraying in that thinner layers (down to 0.002 inch) can be applied, and it should cost less in large-scale production.

Continued on page 64



LP gas now powers many industrial vehicles. Several companies offer full truck lines, have secured UL approval. LP gas generates little carbon monoxide; can be used in enclosed spaces, as is LP-powered Clark Yardlift shown in lower photograph. It handles trays in mushroom-grower's cave.



APPLYING RECORDAK MICROFILMING TO BUSINESS ROUTINES—No. 11 in a series.



Taking off from N. Y. International Airport in an Eastern Air Lines' Super Constellation

# How's the weather ahead?

**Recordak Microfilming helps Eastern Air Lines predict weather changes . . . gives its passengers a smoother flight**

CHECKING BACK on the weather for months and years past lets Eastern's meteorologists forecast today's conditions with increased accuracy.

Recordak Microfilming makes this tremendous research job possible by reducing bulky weather charts to postage-stamp size. *Thousands* of ground-level charts are recorded on one roll of film . . . the related upper-air charts on the next.

Eastern's meteorologists then review these picture-perfect records *simultaneously* in adjacent Recordak Film Readers . . . dissect each weather factor. In this way, definite patterns are established and recorded in Weather Guide Books, which are used to advise dispatchers and pilots of expected changes.

*New Recordak Reliant does the job of 3 microfilers. Gives greatest film savings . . . is easiest to operate. "Recordak" is a trade-mark.*

The end result is a smoother flight route and more dependable performance under all weather conditions.

## FREE . . . Valuable New Booklet

"Short Cuts That Save Millions" shows typical examples of how *over 100 different types of business . . . thousands of concerns . . .* cut record-keeping costs with Recordak Microfilming.

Every executive . . . every systems man will find this profitable reading; will see how many of the short cuts will pay off handsomely in his own business. *Mail coupon for your free copy today.* Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Ave., New York 22, N. Y.

# RECORDAK

(Subsidiary of Eastman Kodak Company)

**originator of modern microfilming—  
and its application to business systems**

MAIL COUPON TODAY

RECORDAK CORPORATION (Subsidiary of Eastman Kodak Company)  
444 Madison Avenue, New York 22, N. Y.

Gentlemen: Please send free copy of "Short Cuts That Save Millions."

Name \_\_\_\_\_ Position \_\_\_\_\_

Company \_\_\_\_\_

Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

R-3





## How A Skellyfuel LP Gas System May Pay For Itself Within A Few Years — Or Even A Few Days:

**...and give you uniform, clean burning, controlled heat**

☐ If your company uses gas on an interrupt:

With a Skellyfuel LP Gas installation as standby fuel your company would have protection against costly production shutdowns due to gas curtailments. A Skellyfuel system can be designed so that no adjustments to your present combustion equipment are required. In case of a gas cut-off, a Skellyfuel unit could pay for itself within a few days.

And when you use Skellyfuel LP Gas you get exceptionally clean burning, uniform heat. Skellyfuel is a pure, moisture-free gas fuel.

With Skellyfuel you get an integrated service. Skellyfuel will design and build your plant, help train your operating personnel, and supply quality Skellyfuel LP Gas.

It will pay you to get the facts about Skellyfuel. Write today for booklet.

☐ If your company does not use gas:

If you use solid or other heavy fuels you'll discover that a Skellyfuel LP Gas installation will give you greater temperature control, less maintenance of equipment, and cleaner, more efficient heat.

You get assured quality and fast delivery, too, because Skellyfuel is a 25-year pioneer in the industry and controls its own tank cars and transports. So don't wait! Get the facts now about Skellyfuel.



**Skellyfuel**  
SKELLY OIL COMPANY



**FREE:** Send this coupon or write today for Skellyfuel booklet.

Skelly Oil Company, Industrial Div., Dept. D  
605 West 47th Street  
Kansas City 41, Missouri

Company Name \_\_\_\_\_ Address \_\_\_\_\_

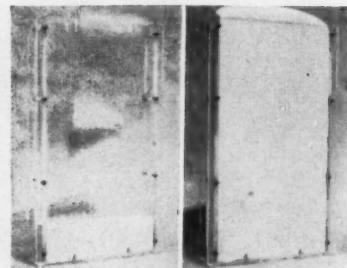
City \_\_\_\_\_ State \_\_\_\_\_ By \_\_\_\_\_ Title \_\_\_\_\_

## NEW MATERIALS

### More foams for industry

Products from powder puffs to cushioning pads will soon be made of polyurethane foams, predicts Mobay Chemical Company, St. Louis 4, Mo. Mobay, a newly-formed company, jointly owned by Monsanto Chemical and Farbenfabriken Bayer, A.C., of Germany, is getting set to produce the basic polyurethane chemicals in quantity and has already licensed nearly a dozen companies to manufacture the foams.

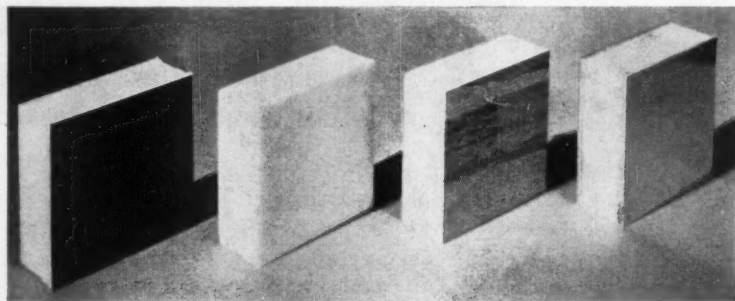
Noted for their toughness, stability, and chemical resistance, polyurethane foams can be produced in a wide range of densities and flexibilities (see November 1953, page 54; April 1955, page 74; and July 1955, page 63). In addition, as Mobay points out, the basic mate-



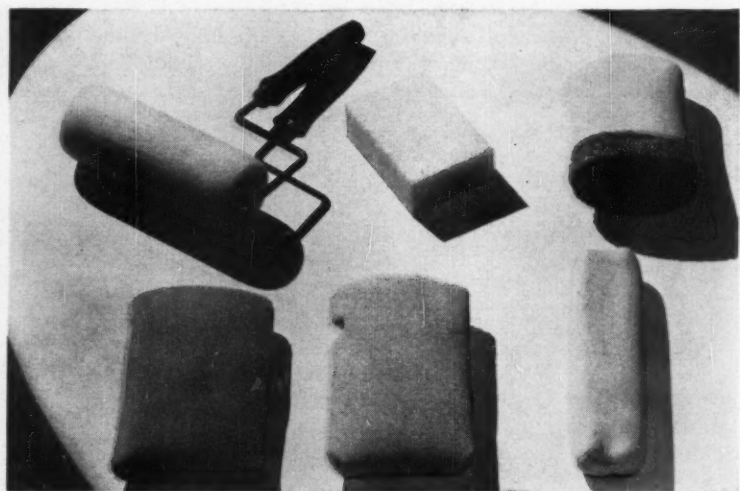
Controlled expansion, 10 to 30 times original volume, makes it possible to engineer polyurethane foams to meet specific product needs.

rials (polyester resins and isocyanates) can be used in making adhesives, paints, wire coatings, and rubber-like products.

With three companies now producing isocyanates (DuPont and National Aniline are the other two), and quite a few supplying polyesters, these versatile materials are really ready to roll.



Sandwiches made with rigid urethane foams are strong, lightweight, durable. Here, Mobay shows panels with wood, plastic, aluminum facings.



Flexible foams resist soaps and solvents, could find applications in many household items like paint roller, sponge, cleaning mitt pictured here.





## Banker's holiday in New York

Recently an officer of one of our correspondents visited our city with his wife. Like most visitors, they were delighted with the special glow New York takes on after dark. During the day, the wife made the customary tours—up Fifth Avenue, through Rockefeller Center—that fascinate so many of our fair visitors. Her husband, though, enjoyed a banker's holiday.

He spent most of every day talking shop with us here at Chase Manhattan. He reviewed his bank's portfolio with our officers, and made a

complete tour of our departments. He was particularly interested in our Transit Department which handles his bank's daily cash letter and our Custody Department which holds many of his bank's securities.

We welcomed the opportunity to get better acquainted with him and with his bank's problems. Mutual helpfulness on practical banker-to-banker terms is a big part of our correspondent services. It's part of the reason why Chase Manhattan is the banker's bank—and why nearly half of the banks in the United

States maintaining banking connection in New York have named us their correspondent.

*If your bank is interested in practical banker-to-banker correspondent service, why don't you talk to the people at . . .*

### THE CHASE MANHATTAN BANK

HEAD OFFICE: 18 Pine Street, New York 15  
Member Federal Deposit Insurance Corporation



# CASH...

## THE KEY TO SUCCESSFUL BUSINESS OPERATIONS

**HELLER COMMERCIAL FINANCING PLANS  
CAN BE THE KEY TO YOUR CASH PROBLEMS**

Businesses throughout America are using Heller funds in amounts from \$50,000 to millions to carry inventories, extend credit to customers, buy new equipment, modernize plants, assure continuing raw material supplies, and for other cash operations.

The wide range of Heller commercial financing facilities makes cash available in days on a continuing basis that expands or contracts with operating needs. Through Heller's services, clients often do a volume of business completely disproportionate to their own capital and as a result increase profits and capital swifter than before.

Today Walter E. Heller & Company advances in excess of Six Hundred Million Dollars annually to industry, makes only one tax-deductible charge for its services, does not share in management or profits.

Heller funds and financial plans are used best by companies which need from \$50,000 to several millions, or whose sales volumes are in excess of \$500,000 per year.

Learn the facts today. Send for a free copy of "Operating Dollars" which illustrates the scope of Heller operations with actual case histories.

RECEIVABLES FINANCING  
FACTORIZING  
REDISCOUNTING  
INSTALLMENT FINANCING  
MACHINERY AND  
EQUIPMENT FUNDING  
INVENTORY LOANS



## Walter E. Heller & Co.

Dept. DR

Bankers Building, 105 W. Adams St. • Chicago 90, Illinois

New York Office: 10 East 40th Street • New York 16

## NEW MATERIALS

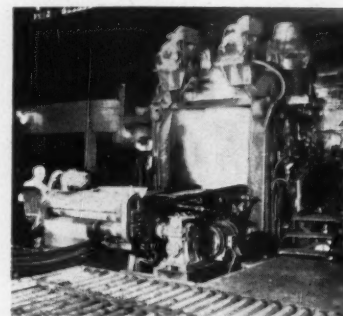
### Putting titanium to work

The products pictured here look pretty ordinary—and that's news. It's proof that titanium metal at long last is beginning to move into practical, everyday jobs.

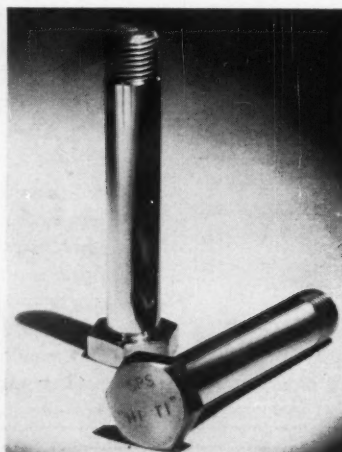
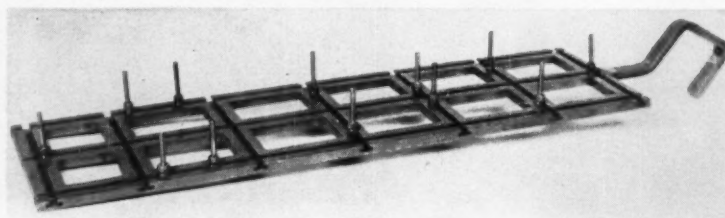
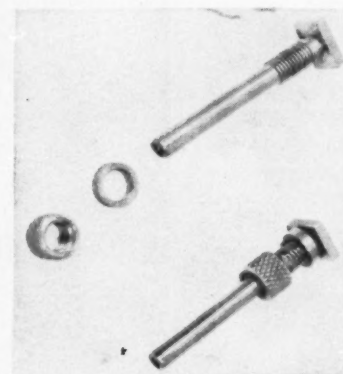
Improved raw materials coming from plants like that at right, and a growing fund of engineering knowledge (see below) are opening up applications like the anodizing rack, for which the light weight metal offers a number of advantages.

Engineers at the Research and Development Laboratories, Ft. Belvoir, Va. point out that titanium is particularly desirable because there is almost no buildup of oxide film. On other metals, such films interfere with flow of electrical current, reduce plating efficiency, make frequent cleaning necessary.

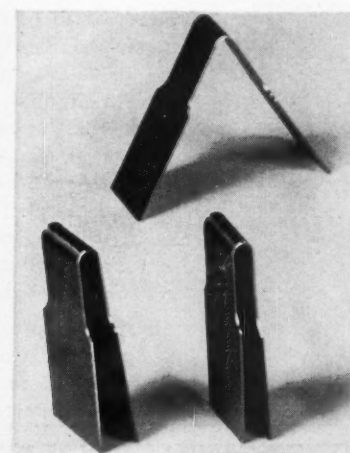
Anodizing rack and contact points (below and right) take advantage of titanium's chemical resistance.



More and better titanium sheet is rolling out of mills like this Malloy-Sharon unit at Niles, Ohio.



High-shear bolts are strong, light in weight. Standard Pressed Steel Co. developed these for aircraft use.



New welding methods produce more ductile welds, as Marquardt Aircraft bend test samples show.



# Only STEEL can do so many jobs so well



**Kashi Ram** is an Indian Rhinoceros at the Chicago Zoological Park, Brookfield, Ill. He's 5' 10" high, 12 feet long, and weighs 4,000 pounds. United States Steel built and erected the rhinoceros-proof fence at the front of Kashi Ram's cage. The bars are 1½" (outside diameter) extra-strong pipe welded through heavy steel channel sections.



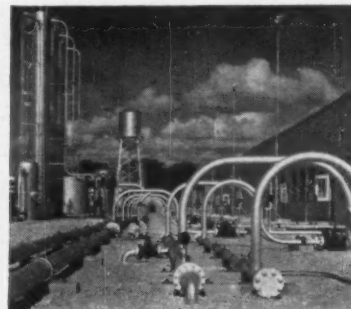
**There's a Steel Hotel** in Georgia. It's built like a wheel, with a 1500-seat auditorium for the hub. The wings radiate like spokes of the wheel, so that every guest has an outside room. Steel construction allows greater comfort per dollar of cost.

SEE THE UNITED STATES STEEL HOUR. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

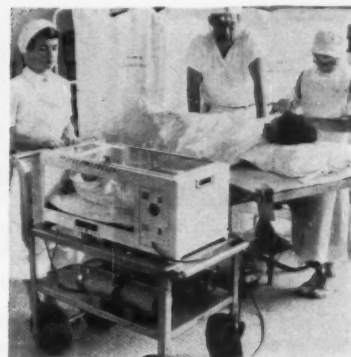
## UNITED STATES STEEL

For further information on any product mentioned in this advertisement, write United States Steel, 525 William Penn Place, Pittsburgh, Pa.

AMERICAN BRIDGE . . AMERICAN STEEL & WIRE and CYCLONE FENCE . . COLUMBIA-GENEVA STEEL . . CONSOLIDATED WESTERN STEEL . . GERRARD STEEL STRAPPING . . NATIONAL TUBE OIL WELL SUPPLY . . TENNESSEE COAL & IRON . . UNITED STATES STEEL PRODUCTS . . UNITED STATES STEEL SUPPLY . . Divisions of UNITED STATES STEEL CORPORATION, PITTSBURGH  
UNITED STATES STEEL HOMES, INC. • UNION SUPPLY COMPANY • UNITED STATES STEEL EXPORT COMPANY • UNIVERSAL ATLAS CEMENT COMPANY



**25 Types of Steel** are available in USS National Seamless Tubes for use in petroleum refineries and other locations involving corrosion and elevated temperatures. United States Steel maintains a large staff of experts to recommend the grade of steel that will give long service, without excess cost.



**Baby's First Ride.** The table supporting that incubator is made from stainless steel. Every modern hospital is a show-place for stainless steel. This lustrous metal is hard, easy to clean, and it resists corrosion like nothing else. USS Stainless Steel is available in many forms, including sheets, plates, rods, tubing, wire—even in the form of I beams.



This trade-mark is your guide to quality steel

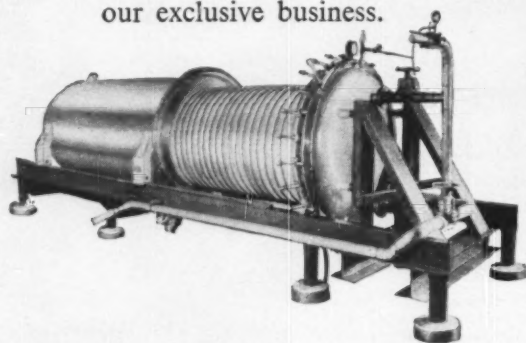


# Progress

... in engineering new and better filtration methods is a continuous performance at

# Sparkler

... For over 30 years filter engineering and manufacturing has been our exclusive business.



The retractable tank Model MCR filter is an example of Sparkler engineering progress. In designing the MCR, the first consideration was to produce a heavy duty filter capable of handling a large production volume; with fast, uniform quality filtration, and with low labor cost.

Cheapness in mechanical construction to produce a competitive priced filter was not attempted. Instead, fine workmanship, backed up with the best quality of materials in every part as required by good engineering was the policy in designing the MCR filter.

Economy in operation with a resulting cost saving quickly discounts the price appeal of some other filters. In many installations the labor saving alone has paid for the MCR filter in six months.

Simplified, fingertip controls and features such as the retractable tank with smooth hydraulic power operation, eliminating the time and labor wasted in breaking pipe connections and outlet seal in opening the filter; the exclusive Sparkler MCR plate design that produces exceptionally high flow rates with unmatched durability; are examples of many design innovations found in this filter.

Almost every filtering job needs special application of filtration engineering principles and you can get this service at Sparkler. Hundreds of special filters have been designed by our engineers who have studied filtration problems exclusively for over a quarter of a century.

Small pilot plant MCR filters are available for product testing.

## SPARKLER MANUFACTURING COMPANY

MUNDELEIN, ILL.

Phone: Mundelein 6-6430

Manufacturing plants in Canada, Holland, Italy, Australia.

Service representatives in principal cities throughout the world.

## SPARKLER FILTERS

Built to A.S.M.E. approved specifications when required.

## BREAKING OUT OF A BEEHIVE

*Continued from page 35*

facturing operation away from Hoboken, we had the basic requirements in mind which any business man might have in similar circumstances. What we wanted were:

1. An existing building which could be modified for our use.
2. A completely one-floor operation.
3. A small community, in which the new plant would be a dominant factor.
4. A good supply of labor.
5. Adequate shipping facilities. For us this meant in relation to our distribution center. The shipping problem is a big and important one and should be gone into thoroughly. Costs in this department can get out of hand and so you must decide beforehand whether you wish to be near raw materials, markets, or a central distribution location of your own.
6. A sufficient supply of water.
7. The basis for good will. We wanted the community to want us.

In locating where we did, all of these requirements were fulfilled but the search was time-consuming and not easy. While we did not define the limits of our spreading-out in terms of miles, we did want to have the new locations within easy reach of our top executives. Naturally, location will depend upon the individual company and all such objectives will be set down long before specific plant locations are discussed.

Our first step was to engage an industrial real estate firm and outline our requirements to them. After due investigation, they came up with several suggestions, most of which were eliminated for one reason or another, and they were forced to start all over. Finally, four potential communities were located and our group set out to study them.

In deciding that a location in the southern part of New Jersey seemed to offer the most advantages, we contacted the New Jersey Chamber of Commerce and continued our search with the help of one of that organization's salesmen. He aided us greatly throughout the negotiations by assuring a supply of water (through obtaining permission to drill a well), obtaining full information on shipping, and so on.

Finally, Cape May Court House seemed to stand out as the logical place for our new plant. A small community in the south-eastern corner of the state, some 30 miles south-west of Atlantic City, it offered us a one-floor former hosiery mill which could easily be adapted for our needs. Our company would be the only industry of substantial size and the town had a reputation for friendliness.

It was at approximately this point in our negotiations that we decided to lay our cards on the table. To demonstrate that K&E is no "fly-by-night" organization, we invited Chamber of Commerce officials, state senators, councilmen and the mayor of Cape May Court House to Hoboken for a dinner and plant tour. We explained our intentions fully and received their complete co-operation.

So the decision was made to purchase the plant. The first hurdle was passed, but an equally important one remained—the setting up of an assembly line for the manufacture of tapes.

Our engineers went to work. They had 25,000 square feet of space in which to provide the most efficient manufacturing assembly line possible. A floor-plan diagram was made to scale and wooden blocks were used to locate every press, bench, and machine involved in the operations.

This assembly-line, of course, was completely on one floor with a materials flow as scientific as our engineers could make it. (It should be added that this basic plan is still in use although a good many minor changes have been made as a result of experience.)

Although we had decided to move the supervisory personnel for the new plant from Hoboken to Cape May Court House, it was felt that the plant employees should all be local persons. It is hard to keep a secret in a small community and the rumor spread quickly that the former hosiery mill was soon to be occupied again. As a result, we received many applications and had no difficulty in hiring the necessary workers.

There is always a danger that such rumors may boomerang on the company. This is a situation



that must be guarded against from the very time that the plant site is chosen. An effective public relations program may help greatly to avoid any embarrassment to a new company in a community. Such a program might include news releases to newspapers within the hiring area which would frankly state the approximate size of the new plant and the approximate number of workers from the community who would be employed during the plant's first year. They would delineate as clearly as possible the types of jobs that would be open together with information regarding the products expected to be manufactured there.

### Take Care

The releases should also emphasize that the positions will be filled solely on the basis of ability or merit and that political influence will play no part in obtaining them. It might be added that all applications will be kept on file and that, as more jobs become available, the applicants will be considered in the order their applications were received. Such a program, together with the talks to public officials

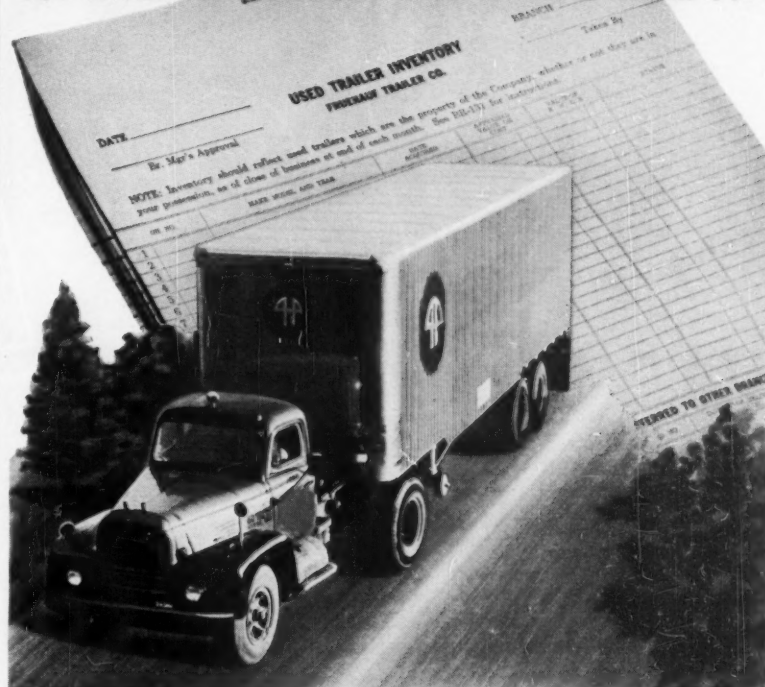
mentioned above, should effectively counteract any ill will that may be engendered among applicants who are unsuccessful.

The Cape May Court House plant has been in operation since September, 1954, and it is possible to make some preliminary comparisons. In the first place, the increased efficiency we have gained in a one-floor assembly line in contrast with the former reliance upon push trucks and elevators is almost immeasurable, although time study analyses are being made.

More concretely, we are running approximately one-third below the former cost of our labor and materials handling for a comparable quantity of production. We budgeted for a saving of about this amount but the actual saving to date has been greater than we had contemplated. Furthermore, we are confident that even a larger saving is possible as we eliminate more and more "bugs."

The growth in efficiency of our new workers has also been interesting to watch. For the first four months of the training period, employee effectiveness was considerably below that of the average of

## HOW A NOTED TRAILER COMPANY CUT INVENTORY REPORT PREPARATION TIME 50%



The problem of Fruehauf Trailer Company branches was to determine quickly, by model, the location of used trailers in each of 71 branches so that requests for models unavailable in one branch could be filled from another.

To solve the problem, inventory information is typed by each branch on forms pre-printed on Colitho Offset Duplicating Paper Plates and sent to the home office, where all plates are duplicated. The 71 parts are collated and bound into books—one for each branch.

Not only are long hours of copying and proof-reading of in-

dividual reports saved, but also all chances of transcription errors are eliminated. Uniform, original-looking copies—in perfect registration and in any amount desired—are obtained at a saving in production time of 50%.

This case history demonstrates the economy and efficiency that countless businesses now enjoy through the use of Colitho Plates. We have a collection of these factual stories which you will find packed with valuable ideas. Just use the coupon and you'll receive your copy of the Colitho Idea File promptly.



Colitho Division,  
COLUMBIA RIBBON AND CARBON MFG. CO., Inc.  
858 Herb Hill Road, Glen Cove, N. Y.

Okay, rush the Colitho Idea File.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

## distinctive letterheads belong on WESTON BOND

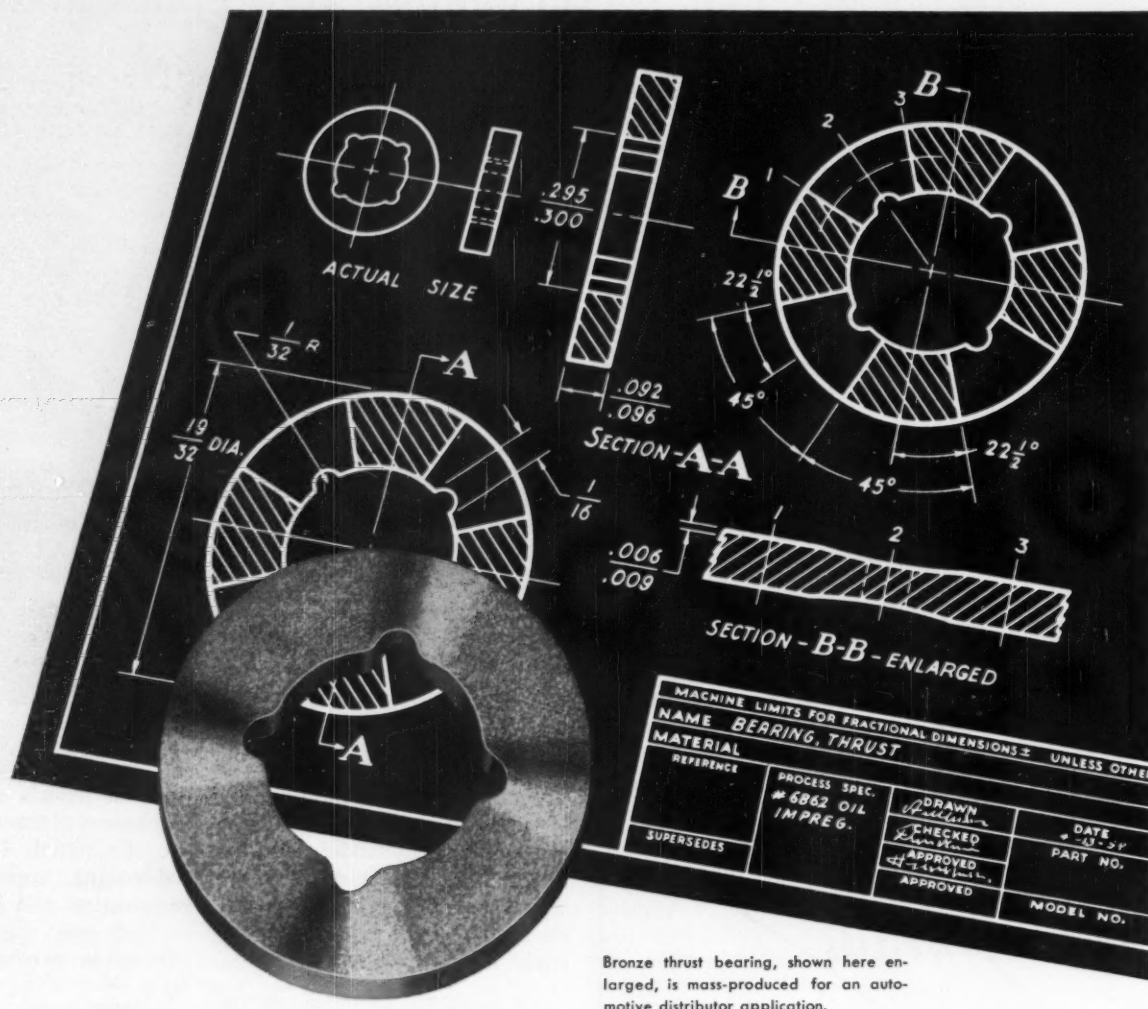
Weston Bond, a superb rag content paper, imparts an obvious air of importance to your letterhead. Its new, brighter white is a perfect background for clean-cut contrast in typing, writing and printing. Economical, too.

Tell your printer to use WESTON BOND. He'll approve, heartily, for letterhead and matching envelopes!



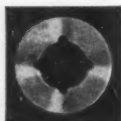
free: Sample Book. Write Dept. DR

BYRON WESTON COMPANY  
DALTON, MASSACHUSETTS  
Makers of Fine Papers for Business Records Since 1863



Bronze thrust bearing, shown here enlarged, is mass-produced for an automotive distributor application.

## MORAINÉ'S EXPERIENCE WITH METAL POWDER HELPS MANY MANUFACTURERS



Whether it's this small thrust bearing or a large, highly complex part, the odds are that it can be produced at lower cost by the Moraine metal powder process when it is to be produced in quantity.

Each week sees new proof of what can be accomplished by cooperative effort between customers and Moraine. Simplified

production, improved performance and reduced cost are three of the results that now benefit many different industries.

In powder metallurgy, Moraine has unequalled experience. Facilities are unexcelled. Whether in production or in planning, the Moraine metal powder process may be able to help you make your product better, at lower cost.



**moraine products**  
DIVISION OF GENERAL MOTORS, DAYTON, OHIO

**METAL  
POWDER  
PARTS**



the skilled workers in Hoboken who had formerly performed the same operations. However, the unit of production gradually increased until January, 1955 it was on a par with the previous Hoboken rate. The assembly group of workers came up to par sooner.

### Abnormal Situation

We have encountered an unusual employee situation, however. The new plant is close to a number of New Jersey shore resorts where energetic men or women can earn considerably more during the summer than they can from the prevailing Cape May employment rates, which we pay. As a consequence, we have found that quite a number of employees would like to take leaves of absence during that period and return in September. One possible solution under consideration is to build larger inventories in the pre-Summer months to allow some employees to be absent during July and August.

Not every factor is favorable, of course, when a somewhat out-of-the-way plant location is chosen. For example, much of the steel for our tapes is shipped from Pittsburgh and we have found that the cost is higher than comparable shipments to Hoboken. However, this increased expenditure is more than compensated for by the lower tax rates and the increased efficiency.

Another plus from our new location, although somewhat intangible, is the keener interest in the making of a superior product which our Cape May employees show. They have a pride of workmanship which is refreshing.

From the standpoint of management, there is also much to be said

for decentralization. In Hoboken, the man in charge of the tape operation was a department head. Now, in moving to Cape May, he has become a plant manager with greatly increased decision-making responsibility as well as the opportunity for greater financial return. Personnel, methods, engineering, and production problems are now wholly his responsibility. He receives a profit and loss statement covering the division's operations each month and makes recommendations regarding capital investments relating to the plant.

### Planning Ahead

As has been indicated, our company's decentralization activities began shortly after World War II. During the war we had done considerable research and planning, preparatory to entering the completely new field of positive line, dry diazo reproduction materials (a product similar to blueprints). On investigating the manufacturing problems involved, we found we could not make the new line in Hoboken because a special plant with special equipment was necessary.

Our first, somewhat hesitant, action was to rent a building in Summit, N. J. in which a chemical laboratory and a coating operation were installed. Later the coating activity was shifted to an existing plant in Chatham, N. J., which we purchased.

Our feet were wet now. We liked the sensation. Decentralization was in our blood.

The next move was to find a location for the manufacture of our plastic products, such as triangles and the templates used in the Leroy

equipment for lettering and symbol drawing. Here again we were confronted with a helter-skelter situation in Hoboken.

The decision to locate this manufacturing operation in the little town of Lakeville, Conn., in the far north-western corner of the state, in 1951, was based largely upon our discovering a man who was fully qualified to set-up the new undertaking as we wanted to keep the former department head in Hoboken. We also found a small building which served as the nucleus of a new plant.

### More Moves

The third step in the move out of Hoboken involved the coating and converting of K&E papers and tracing cloth. The reasons behind our desire to find a new plant for these operations were the same as in the case of the tape line—the inconveniences of a multi-storied building as contrasted with a new layout all on one floor. Furthermore, we had no place in Hoboken to put the modern equipment needed for paper coating.

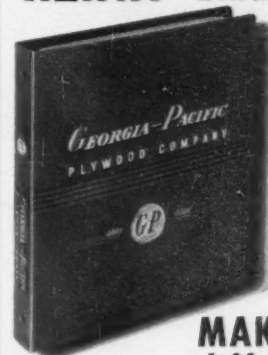
An industrial real estate man was consulted in this case also. It was a pure coincidence that the town chosen for the new plant should be just a few miles away from the Lakeville, Conn. plant but both areas have provided us with excellent workers.

The Taconic Division at Miller-ton, N. Y., has been a cost saver since it was opened in 1953. We have substantially less waste than formerly as a result of the greatly increased quality control made possible by the new machines. Our labor handling costs also decreased to a considerable extent.

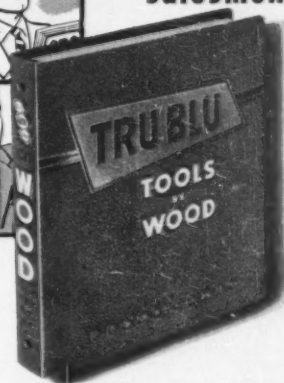
The fifth, and newest, step in the K&E decentralization program was the establishment of the York Division at Kennebunk, Me., where a former textile plant is now being re-equipped for the manufacture of builders' surveying instruments and of one of the company's well known drafting machines.

In all of these decentralization steps, accessibility has been a factor which has been important. Although each unit is largely autonomous, there are many occasions when company executives from Hoboken must visit a plant. The Kennebunk factory, obviously, is the farthest from headquarters but even

## HEINN loose-leaf binders



often  
**MAKE** the  
difference  
between  
salesmen



Why is one salesman more productive than another? You can point to experience or personality — or to the ability to present product facts quickly.

The more productive salesman has an up-to-date loose-leaf catalog. More often than not, he uses a Heinn Loose-Leaf Binder with carefully planned indexing — and tells his sales story faster to create extra sales volume.

Millions of Heinn Loose-Leaf Binders, now in use, make salesmen's and customers' catalogs more effective. Each Heinn unit is made of beautiful, durable materials and has a smooth, easy-action mechanism — a masterpiece that reflects pride of workmanship. Compare any Heinn product with another kind, and you'll learn that there's as much difference between binders as between salesmen!



**"FACTS AT YOUR FINGERTIPS"**

... Heinn's helpful booklet for the catalog planner. When writing for your copy, please describe your binder and index problems.

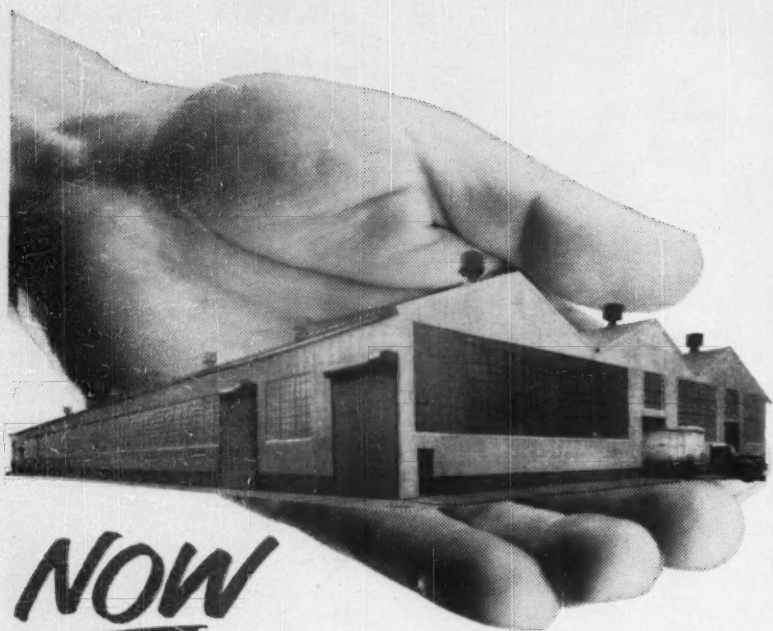
### THE HEINN COMPANY

310 W. FLORIDA STREET  
MILWAUKEE 4, WISCONSIN

ORIGINATORS OF THE  
LOOSE-LEAF SYSTEM OF CATALOGING  
LEADERS SINCE 1896



"The way I figure it, this tan is costing me \$40 a square inch."



**NOW**

## THE BUILDING YOU WANT

where you want it

when you want it

## ENGINEERED BUILDINGS

at stock-model prices

McCloskey Engineered Buildings assure you *all the savings* normally effected by use of stock patterns and mass production. *Plus* precision-design to your specific needs.

McCloskey buildings are easily and economically erected using local facilities or through the McCloskey organization. RIGID FRAME design permits easy accessibility for cleaning and painting, resulting in substantial savings in maintenance cost.

Buildings engineered by the McCloskey Company of Pittsburgh—whether large or small—are planned and built to *suit your purpose*.

As functional housing for industries, *they can include* provision in the basic structure for monorails, craneways, overhead conveyors, varied levels, etc.

To better serve your individual needs and eliminate multiple fees, we suggest McCloskey Engineered Buildings.

*YOUR INQUIRY places you under no obligation.*



**McCloskey COMPANY**  
OF **PITTSBURGH**  
designers and builders

MAyflower 1-6700

PITTSBURGH 1, PA.

3401 LIBERTY AVE.

in this instance an executive can reach the York Division in approximately one and one-half hours' flying time.

The company has also purchased two small affiliated companies. One is the Screen Engineering Company, Inc., in California, and the other is the Cury Manufacturing Company, Inc., Chicago.

### Central Warehouse

But the decision to set-up a centrally located distribution center at Teterboro, N. J. for the stocking and shipping of all our items was a major move. We had considered this for a long time.

As in our Hoboken manufacturing operations, we had found that most of our finished merchandise was scattered over the third, fourth and fifth floors of the main building. This was highly inefficient, requiring a drastic remedy. Some consideration was given to the installation of a conveyor belt system within the factory but this was quickly proven to be quite impractical.

The only solution seemed to be the one chosen—the erection of a

55,000 square-foot warehouse which would provide adequate space for the stocking of all merchandise and for its prompt shipment by rail and truck—via the New Jersey Turnpike—as well as by ship to customers overseas.

Again everything is on one floor.

Although there are many things to be learned before you make your move, there are others that come to you afterwards. Some you accomplish without realizing it. For us the most important factors to be considered in planning a series of decentralization moves are:

1. Obtaining adequate one-floor facilities in a new community for turning out one line of products with maximum efficiency.

2. The friendliness of a community and its eagerness for the new plant.

3. The accessibility of each new plant to executives from the headquarters office of the company.

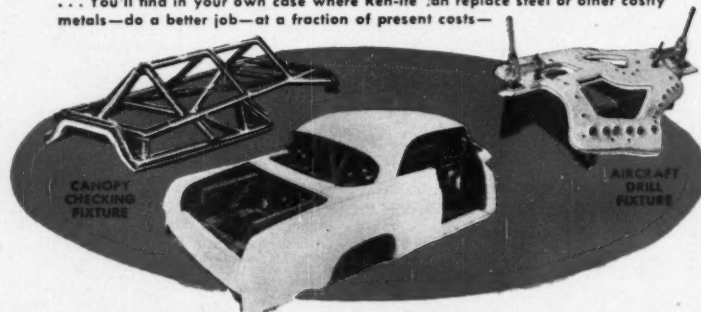
Each company must move in relation to its own circumstances and dictates, but I feel that in this experience of ours there have been common problems found and answered.

THE END

## FASTER! EASIER!

CUT TOOLING TIME AS MUCH AS **70%**  
WITH REN-ITE TOOLING PLASTIC

The trend is to Ren-ite Tooling Plastics for faster tooling at greatly reduced costs . . . You'll find in your own case where Ren-ite can replace steel or other costly metals—do a better job—at a fraction of present costs—



Here are examples of how Ren-ite Tooling Plastics reduced tooling costs, tooling time and tooling weight in automotive and aircraft industries . . . No drastic changes in production equipment or procedures needed . . . Good jobs well done with Ren-ite — and Ren-ite is working on others.

Ren-ite, the dependable dimensionally stable tooling plastic, is a thermosetting resin used as a laminating plastic without heat or pressure for general tooling applications. Ren-ite is used successfully for models, prototypes, spotting racks, panels, forming dies, duplications as well as checking, welding, drill and router fixtures. Foundry applications are being developed.

**Ren-ite**

**PLASTICS, INC.**

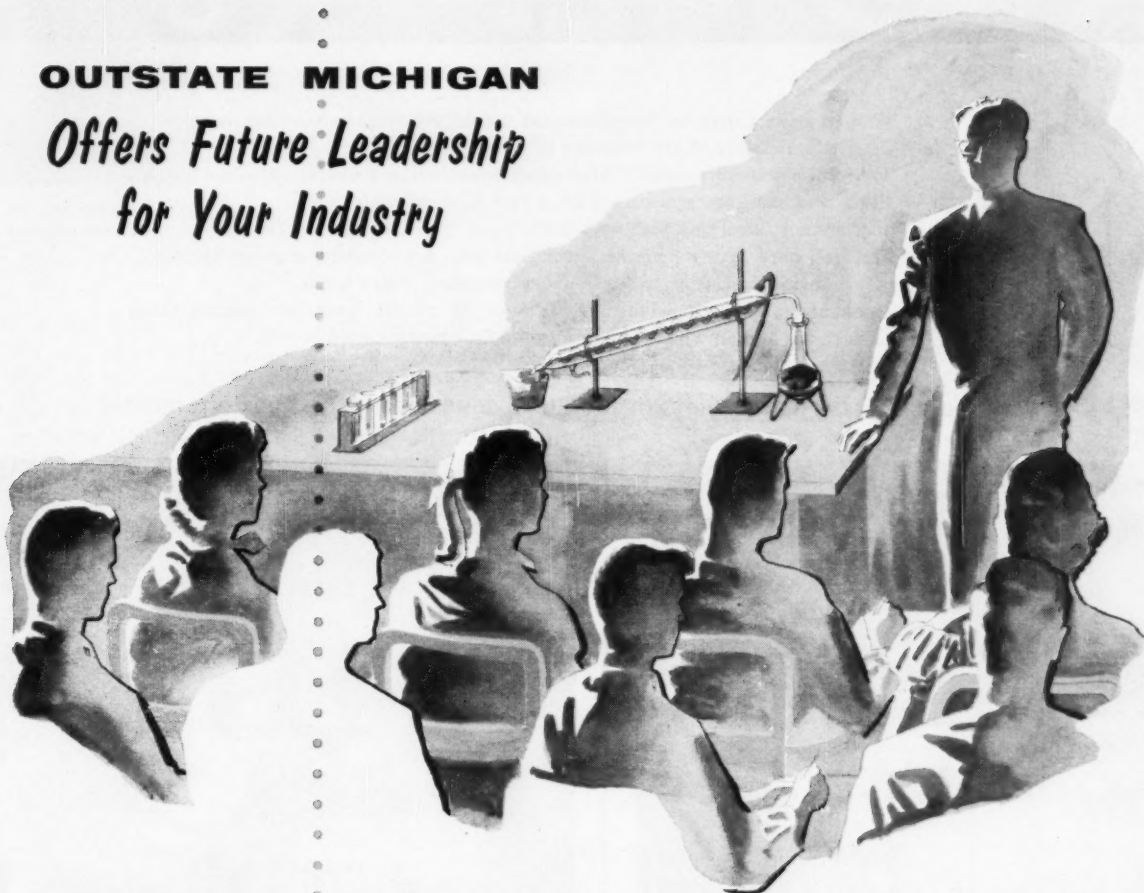
3183 South Cedar Road, Lansing 4, Michigan  
Offices in Chicago, Cleveland, Detroit,  
Los Angeles, New York and St. Louis

REN-ITE RESEARCH AND ENGINEERING AVAILABLE AT NO COST TO YOU . . . NO CONTRACT REQUIRED





## OUTSTATE MICHIGAN *Offers Future Leadership for Your Industry*



Adrian  
Albion  
Alma  
Aquinas  
Calvin  
Ferris Institute  
General Motors  
Institute  
Hillsdale  
Hope  
Kalamazoo  
Madonna  
Nazareth  
Olivet  
Siena Heights  
Central  
Michigan  
Western  
Michigan



Every industry needs young people with alert and eager minds . . . young people who will develop into the leaders and the managers of tomorrow.

Outstate Michigan has plenty of future industrial leaders. Many are students in Michigan's universities and colleges.

Within the area served by Consumers Power Company are Michigan State University and sixteen senior colleges.\* Construction of the first building for a Flint branch of the University of Michigan is under way. Close by, in Ann Arbor, is the University of Michigan itself, and, in Detroit, Wayne University and University of Detroit. Combined enrollment of Michigan's 40-odd colleges, universities and technical institutions is about 100,000 students.

From Michigan's educational centers come the kind of young men and women that industry needs today and will need even more acutely in the future.

Young people of every degree of skill and training are among the many assets Outstate Michigan offers to industry.

***Get the Facts, Mr. Industrialist, and you'll agree . . .***

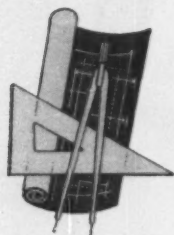
**OUTSTATE MICHIGAN IS THE PLACE TO GO PLACES!**

FOR INFORMATION CONTACT  
INDUSTRIAL DEVELOPMENT DEPT.

**CONSUMERS POWER COMPANY**  
JACKSON, MICHIGAN

# Craftsmen of the 20<sup>th</sup> Century

No. 6 of a series to introduce you to some of industry's outstanding plastics craftsmen



Though names may be forgotten, the world still remembers and admires the craftsmanship of the artisans of other ages.

Today, the selfsame skills that created beautiful and useful objects of wood, silver and steel are working with a new kind of material—an exciting family of plastics.

Pictured here are two of the specialists who are creating a great variety of products of plastics to serve every industry, every home.

Monsanto, a major producer of high-quality plastic materials, salutes these modern craftsmen who are helping to mold America's tomorrow.

When your plans call for plastic parts or products, consult an expert custom molder



**George J. Geretschlaeger, Minnesota Plastics Corporation, St. Paul, Minn.** For 15 years Mr. Geretschlaeger has been learning his craft at every operational level. Today, as Molding Superintendent, he applies his first-hand knowledge of molds and materials to every job. Recently, by designing a trimming fixture that did away with hand de-gating, he stepped up production on a washer for casement windows from 2,500 to 4,500 pieces an hour. Says Mr. Geretschlaeger: "It takes the combined talents of many people with long experience in the various phases of injection molding to produce quality plastic parts at minimum cost."

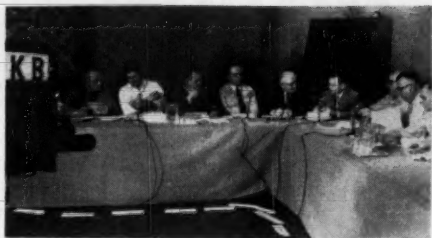


**Fred J. Kirk, Kirk Molding Co., Clinton, Mass.** A background of automotive and aircraft skills has shaped Mr. Kirk's philosophy that "producing the best products at lowest cost is a matter of exacting the best performance from machines and materials." As his company's owner, he has won customer confidence by equipping his plant with some of the finest automatic equipment available in the industry. Specializing in custom molded packages for products such as silverware and precision power tool components, Mr. Kirk contributes his personal attention and 14 years' experience in injection molding engineering to every job.

MONSANTO CHEMICAL COMPANY,  
PLASTICS DIVISION, SPRINGFIELD 2, MASS.







The camera catches the tension of an actual labor-management meeting . . .

## Films for Management

Brief reviews of new releases

of 16 mm. motion pictures—made for, by, or about business and industry.

**You Are There at the Bargaining Table** (50 minutes, b&w) and you are there for the first time through the medium of film. This is the latest picture in the new film program of the American Management Association which prefers to show real-life happenings in business rather than re-enactments.

The closed doors of the labor-management bargaining session were opened by the A.M.A. for some 2,000 personnel and labor relations specialists by closed-circuit television last February.

Most of the film reveals this one bargaining contract session between the Rogers Company—a 350-em-

ployee plastics plant—and representatives of the International Brotherhood of Paper Makers (AFL). Other scenes sketch in the background and show the final signing of the contract several weeks later.

Among the issues discussed—both heatedly and deliberately—were wage rates, fringe benefits, and the share-of-production incentive pay plan. A spoken commentary occasionally points out significant maneuvers and techniques employed by both sides. One of the most surprising aspects of the film: virtually all the participants were oblivious to the camera.

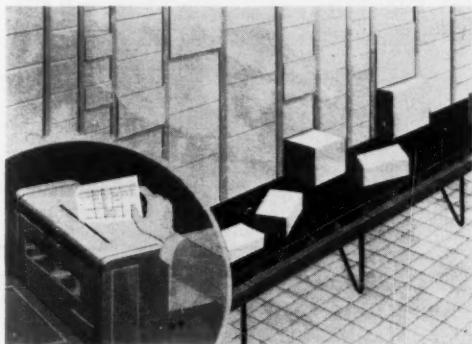
Along with the film, which rents

for \$50 a day and \$15 for each additional day, goes a 146-page conference kit, so that the film can be made part of a training session in your labor relations or management development programs.

Other executives both directly and indirectly affected by collective bargaining will consider the film a rewarding opportunity to examine one of the focal points of industry. Made largely from a kinescope by Box Office Television, Inc., the film can be rented (or purchased for \$185), from the Management Film Library, A.M.A., 330 West 42nd Street, New York 36, N.Y.

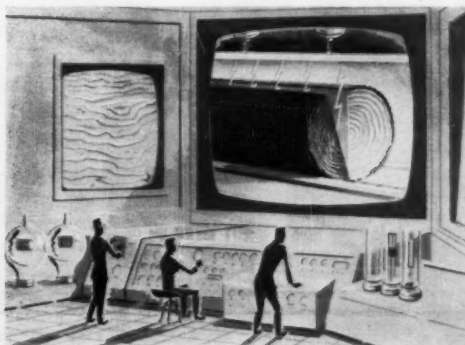
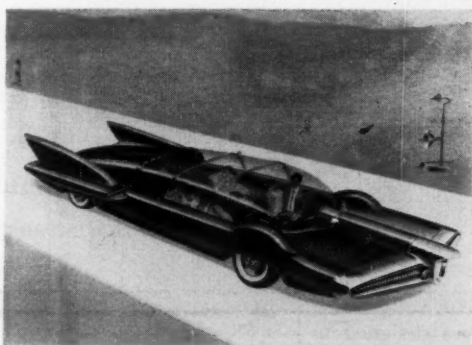
Reviews continue on page 76

## People Products and Progress-1975 (30 minutes, color)



Here's the world of to-morrow as it now appears on the drawing boards and in the inventive minds of many industrial planners. This vivid vision of our economy was created by the Chamber of Commerce from information provided by trade associations and industrial groups.

Among the new processes and products are the automatic warehouse, the driverless automobile, and the automated sawmill. Release date and rental information may be obtained from Business Relations Dept., U.S. Chamber of Commerce, 1615 H St., Washington 6, D.C.

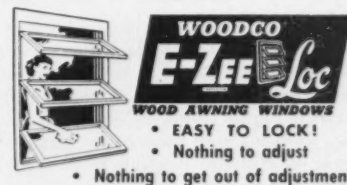


leadership in  
window design  
and construction—

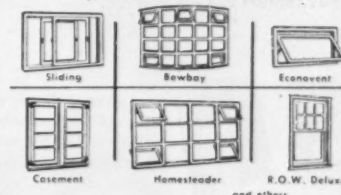


the result of over  
35 years of pioneering  
in wood window design

The confidence of customers is earned, and can be retained only through consistently good performance and service. We have merited this confidence for more than 35 years by producing windows that represent the finest for beauty, construction, performance and ease-of-installation.



Representative Woodco Windows



For your nearest distributor and free informative literature write to

**WOODCO CORPORATION**

ROCKWELL of RANDOLPH, Inc.

(Wholesale Millwork Div.) Randolph, Wisc.

E-ZEE LOC AWNING WINDOW DIV.,

Miami 47, Fla.

Distribution Divisions

NORTH BERGEN, N. J. • SCHENECTADY 3, N. Y. • LOWELL, MASS.



Model MC-4-24. 4000 lb. cap.

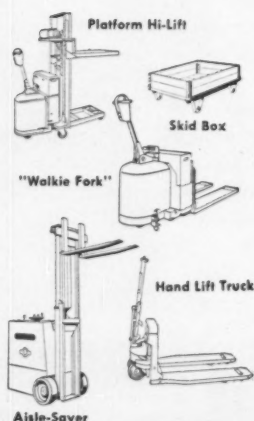
## Save Space...Save Money with CRESCENT PALLETIER

Barrett Telescopic Palletier—the all-purpose electric fork truck—handles a wide range of jobs. Loads and unloads trucks, box cars. Lifts capacity loads to higher levels for spacesaving high stacking. Reduces man power to a minimum. Speeds flow of material through plant. Cuts handling costs to the bone.

**SAFETY FEATURES:** Complete operator visibility in all directions—less fatigue. Smooth-acting hydraulic brakes. Standard collapsed heights—68" or 83". Total fork lifts—90" or 130", with either high or low free lift. Nontelescopic models; special lifts. Battery and Ready Power available. Attachments for all models.



Barrett Palletier Catalog gives detailed description. Also Catalog 535 on the complete Barrett Line. Your request will bring copies.



### Barrett equipment for every job

High labor costs demand specialized equipment. There is a Barrett-built unit specially designed to handle any moving job at low cost...even when operated by less experienced help. Your Barrett representative will gladly assist in selecting the type and model of material handling equipment best suited to your needs.

**BARRETT-CRAVENS COMPANY**  
612 Dundee Road, Northbrook, Ill.

Representatives in All Principal Cities.  
Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada

**BARRETT**  
ONE MAN DOES MORE THAN 3 OR 4...WITH A BARRETT

## Reel Briefs

Here is a sample of the hundreds of new business films produced each month. Besides offering you new profit-producing ideas, they may be useful in various training programs for employees, foremen, or executives. Or perhaps they may lead you to make a film of your very own, for sales promotion, public relations, or various other purposes.

**A Dawn's Early Light** (30 minutes, color) reveals the story of Westinghouse's atomic energy program by telling the tale of a nuclear scientist and his disillusioned son. It shows the progress which is being made in putting a social harness on the atom. Scenes of the atom at

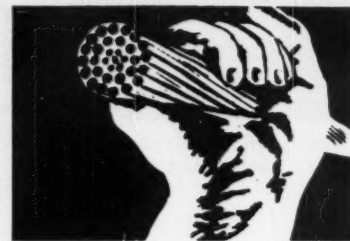


work in industry, medicine, agriculture, and other lines are included. Produced with the technical assistance of the AEC, the film is available free from Film Division, Westinghouse Electric Corporation, 410 Liberty Avenue, Pittsburgh 30, Pa.

**Direct Line to Decision** (22 minutes, color) refers to the Electronic Data Processing machines which provide management with a short, direct path through the mountains of paperwork in modern business. It shows these mathematical marvels at work and offers a long look at the office of the future. Produced by Raphael G. Wolff Studios, the film is available free from any International Business Machines Corporation office.

**One to a Customer** (11 minutes, b&w) is a new employee safety film which promotes the use of personal protective equipment. Illustrated are dozens of different kinds of equipment, for both men and women, together with the particular danger each was designed to meet. It is available free from Public Education Department, Aetna

## MOTION PICTURES



## work For Industry

**They may be the tools you need to solve your specific business or sales problem.**

Find out how a well-planned Dynamic Film can fit into your production or sales picture ...Write for our Case History File of Dynamic Films at work in industry.

A moderate budget can put top quality, fully effective Dynamic produced motion pictures to work for you.

**Creative thinking on film**

**dynamic films, inc.**

112 West 89th St., N.Y. 24, N.Y.  
1714 Huidy, Houston 19, Texas

No. 11 in a series

**BATON**

builds for  
**The Atlantic  
Refining Co.**

★  
**Baton Construction Corp.**  
PHILADELPHIA

## Materials Handling

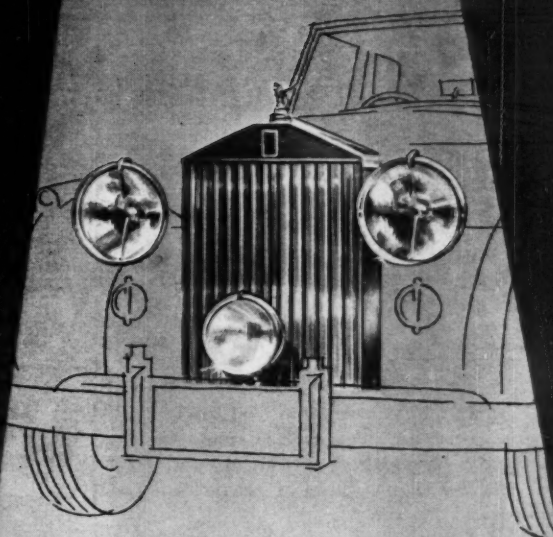
Don't miss the special article on *Better Handling* in the September issue of DR&MI.

This provocative feature reveals the challenge management must meet if productivity is to be improved and profits increased.



SPOTLIGHT

ON SUPERIORITY



*Rolls-Royce, Courtesy of J. S. Inskip, Inc., New York City*

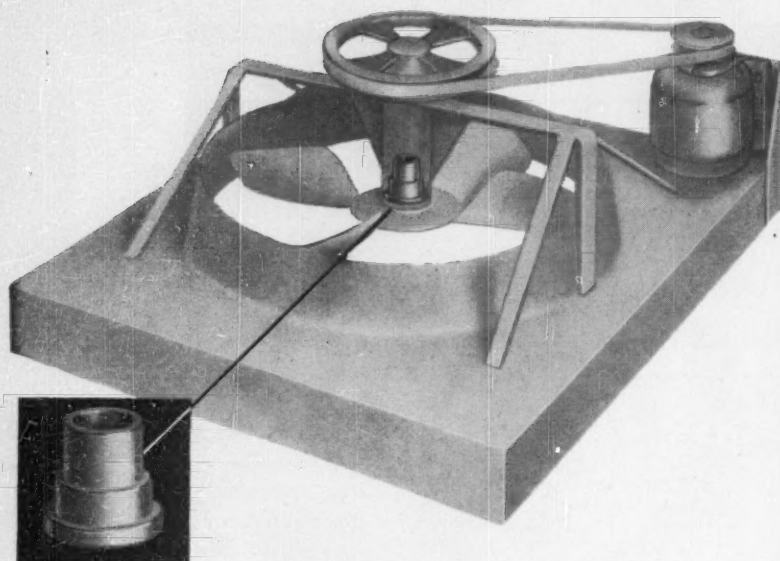


**Rising**

Ask your printer or paper merchant to show you the Rising group of papers . . . a superior sheet for everything from a wedding announcement to a stock certificate. Qualities up to 100% Rag.

RISING PAPER COMPANY...IN THE BERKSHIRES, HOUSATONIC, MASS.

## ONLY CHRYSLER MAKES OILITE®



### The Bearing That Wouldn't Wear Out

*125 years\* service without adding a drop of oil*

How long will a bearing last? An OILITE customer making large vertical shaft attic fans wanted to know the answer. He subjected a fan equipped with an OILITE bronze flange bearing to an \*accelerated life test equivalent to 125 years of service. Throughout the test it ran quietly and smoothly. *Not one drop of oil was added—it showed no apparent wear.*

OILITE bearings hold oil by capillary attraction. Oil film on the surface insures positive, constant lubrication. Particularly good in trouble areas where lubrication is difficult or impossible. The built-in oil cushion allows OILITE Heavy-Duty Bearings to absorb shocks and stresses.

Heavy-Duty, self-lubricating OILITE bearings are Chrysler engineered to meet individual requirements. Standard bearings are available from local dealer stocks. Also cores, bars, plates, discs and strips in sizes ranging from 1/2" to 15 1/4" I.D. and 1" to 18 1/4" O.D.

The engineering facilities of Amplex and Chrysler, unmatched in the powder metal industry, are ready to help you with your bearing problems. For on-the-spot service, consult your telephone yellow pages for the field engineer near you.

### IT'S NEW! IT'S FREE!

First complete information on self-lubricating bearings, finished machine parts, filters and other powder metal units. 52 pages. Write today for OILITE Engineering Manual E-55.



**In Powder Metallurgy... it's Amplex**

**CHRYSLER CORPORATION  
AMPLEX DIVISION**

Dept. W-8

Detroit 31, Michigan

Life Affiliated Companies, Hartford 15, Conn.

**The Story of the NLRB** (23 minutes, b&w) is a documentary produced by Rutgers University to tell how management and labor can use the services of the National Labor Relations Board to improve working harmony. The first film on the subject, it is available from the Institute of Management and Labor Relations, Rutgers University, 77 Hamilton Street, New Brunswick, N. J.

**Link-Belt Shell Molding System** (15 minutes, color) describes one of the new technologies which is aiding the development of automation in industry. It shows how castings can be produced at the rate of 240 an hour on a four-station machine. Available free from Link-Belt Co., Dept PR, 307 North Michigan Ave., Chicago 1, Ill.

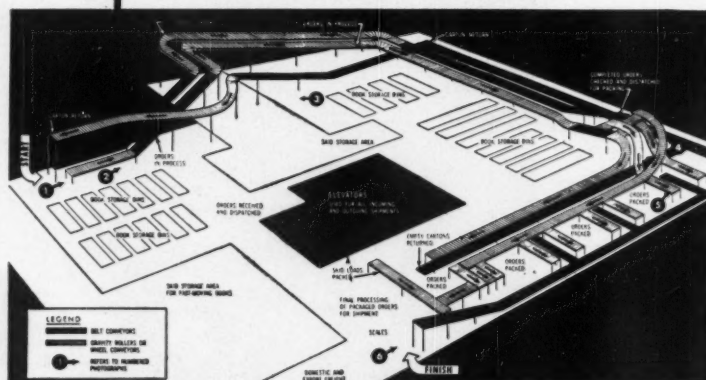
**Flaw Location With Dye Penetrants** (23 minutes, color) provides a close look at one of the most important processes for inspecting metal parts. This training film demonstrates every angle of the process

from laboratory theory to actual production-line techniques. It is available free from Turco Products, Inc., 6135 South Central Avenue, Los Angeles 1, Calif.

**The Spray's the Thing** (14 minutes, color) is the first film devoted to aerosol products. It depicts the origin, present uses, and future outlook for this new industrial development. The use of aerosol products in the factory and the possibility of marketing other products in this form are described. Produced by John Sutherland Productions, it can be borrowed free from the Du Pont Company, 6529 Nemours Bldg., Wilmington, Del.

**Bradshaw's Billions** (25 minutes, color) is a pleasant comedy about the rise of a business man who produces "fortasets" and other essentials. It traces his success to use of advertising and printed matter. The film provides a valuable step-by-step introduction to printing processes and their uses by the executive. It can be borrowed free from Camera Club and School Service, Eastman Kodak Company, Rochester 4, N.Y.

### HOW PUBLISHING COMPANY SAVED MONEY WITH MECHANIZED SHIPPING LAYOUT



Write for your copy today



**HERE'S A VALUABLE CASE HISTORY** on how a large nationally known publishing house increased efficiency 100 percent and increased shipments in peak periods by 50 percent. Report describes and illustrates complete conveyor installation and layout which enables company to ship up to 8,000,000 books annually. Let this thought-provoking "success story" help you find hidden profits by mechanizing your shipping layout.

### ISLAND EQUIPMENT CORP.

27-01 Bridge Plaza North Long Island City 1, N. Y.  
PACEMAKERS OF PROGRESS IN CONVEYING AND MATERIALS HANDLING



# The FIRST NATIONAL CITY BANK of New York



Head Office: 55 Wall Street, New York

73 Branches in Greater New York

59 Branches Overseas

## Statement of Condition as of June 30, 1955

### ASSETS

CASH, GOLD AND DUE FROM BANKS . . . . .	\$1,629,936,191
UNITED STATES GOVERNMENT OBLIGATIONS . . . . .	1,719,056,990
OBLIGATIONS OF OTHER FEDERAL AGENCIES . . . . .	45,738,966
STATE AND MUNICIPAL SECURITIES . . . . .	553,358,984
OTHER SECURITIES . . . . .	127,201,545
LOANS AND DISCOUNTS . . . . .	2,641,050,349
REAL ESTATE LOANS AND SECURITIES . . . . .	32,923,095
CUSTOMERS' LIABILITY FOR ACCEPTANCES . . . . .	42,928,170
STOCK IN FEDERAL RESERVE BANK . . . . .	15,000,000
OWNERSHIP OF INTERNATIONAL BANKING CORPORATION . . . . .	7,000,000
BANK PREMISES . . . . .	33,068,518
ITEMS IN TRANSIT WITH BRANCHES . . . . .	304,043
OTHER ASSETS . . . . .	8,421,608
<b>Total</b> . . . . .	<b>\$6,855,988,459</b>

### LIABILITIES

DEPOSITS . . . . .	\$6,174,785,823
LIABILITY ON ACCEPTANCES AND BILLS . . . . .	\$ 72,008,716
LESS: OWN ACCEPTANCES IN PORTFOLIO . . . . .	27,623,018
DUE TO FOREIGN CENTRAL BANKS . . . . .	19,193,300
(In Foreign Currencies)	
RESERVES FOR:	
UNEARNED DISCOUNT AND OTHER UNEARNED INCOME . . . . .	22,884,890
PAYMENTS UNDER AGREEMENT OF MERGER DATED MARCH 1, 1955 . . . . .	1,641,200
INTEREST, TAXES, OTHER ACCRUED EXPENSES, ETC. . . . .	31,519,148
DIVIDEND . . . . .	5,500,000
CAPITAL . . . . .	\$200,000,000
(10,000,000 Shares—\$20 Par)	
SURPLUS . . . . .	300,000,000
UNDIVIDED PROFITS . . . . .	56,078,400
<b>Total</b> . . . . .	<b>\$6,855,988,459</b>

Figures of Overseas Branches are as of June 25.  
\$561,131,943 of United States Government Obligations and \$20,712,000 of other assets are pledged to secure Public and Trust Deposits and for other purposes required or permitted by law.

Member Federal Deposit Insurance Corporation

Affiliate of The First National City Bank of New York for separate administration of trust functions

### CITY BANK FARMERS TRUST COMPANY

Head Office: 22 William Street, New York

Capital Funds \$32,321,580

### DIRECTORS

STANLEY C. ALLYN  
President, The National Cash Register Company

GEORGE F. BAKER, JR.  
Trustee, George F. Baker Trust

SOSTHENES BEHN  
Chairman, International Telephone and Telegraph Corporation

PERCY CHUBB, 2nd  
Partner, Chubb & Son

CLEVELAND E. DODGE  
Vice-President, Phelps Dodge Corporation

R. GWIN FOLLIS  
Chairman of the Board, Standard Oil Company of California

DE WITT A. FORWARD  
Senior Vice-President

ROY H. GLOVER  
Chairman of the Board, The Anaconda Company

JOSEPH P. GRACE, JR.  
President, W. R. Grace & Co.

GEORGE A. GUERDAN  
Vice-President and Cashier

HARRY C. HAGERTY  
Financial Vice-President, Metropolitan Life Insurance Company

AMORY HOUGHTON  
Chairman of the Board, Corning Glass Works

KEITH S. MCHUGH  
President, New York Telephone Company

ROGER MILLIKEN  
President, Deering, Milliken & Co., Incorporated

EDWARD S. MOORE, JR.  
Executive Vice-President, National Biscuit Company

CHARLES G. MORTIMER  
President, General Foods Corporation

ALEXANDER C. NAGLE  
Chairman of the Executive Committee

CHARLES C. PARLIN  
Shearman & Sterling & Wright

RICHARD S. PERKINS  
Vice-Chairman of the Board

FREDERICK B. RENTSCHLER  
Chairman, United Aircraft Corporation

JAMES S. ROCKEFELLER  
President

HOWARD C. SHEPHERD  
Chairman of the Board

WILLIAM C. STOLK  
President, American Can Company

REGINALD B. TAYLOR  
Williamsville, New York

ROBERT WINTHROP  
Robert Winthrop & Co.

### SENIOR MANAGEMENT

HOWARD C. SHEPHERD  
Chairman of the Board

ALEXANDER C. NAGLE  
Chairman of the Executive Committee

JAMES S. ROCKEFELLER  
President

RICHARD S. PERKINS  
Vice-Chairman of the Board

DEWITT A. FORWARD  
Senior Vice-President

GRANT KEEHN  
Executive Vice-President

J. HOWARD LAERI  
Executive Vice-President

GEORGE S. MOORE  
Executive Vice-President

LEO N. SHAW  
Executive Vice-President and Manager Overseas Division

ALAN H. TEMPLE  
Executive Vice-President

GEORGE A. GUERDAN  
Vice-President and Cashier

RALPH H. THOMSON  
Comptroller

## See practical automation right now!

An exposition that *does* something about AUTOMATION. In one place, at one time, *see* the practical things—mechanisms, instruments, controls, handling devices, data processors, hydraulic, electric, mechanical and pneumatic components, etc.—that you can apply right now to make your production and processing more automatic.

This show has been designed for the production function in industry, leveled at the men who must re-engineer production and processing lines immediately in order to cope with rising costs and hot competition.

You can see the great MACHINE TOOL SHOW, too!

Your registration badge will admit you, at no additional fee to the Machine Tool Show, first since 1947, at the International Amphitheatre, Chicago, Sept. 6-17, 1955.

# the PRODUCTION ENGINEERING SHOW

SEPTEMBER 6-16, 1955  
NAVY PIER, CHICAGO

### The Automation Exposition

MONITORING EQUIPMENT

GOVERNING EQUIPMENT

MACHINE TOOL ACCESSORIES

SPECIAL PRODUCTION EQUIPMENT

EQUIPMENT COMPONENTS

INSPECTION AND GAUGING EQUIPMENT

COMMUNICATIONS EQUIPMENT

HANDLING EQUIPMENT

Write for tickets today to:

Clapp & Poliak, Inc., Dept. PES-3  
341 Madison Avenue  
New York 17, N. Y.

## CORROSION

Continued from page 36

is fully exposed, and part is sheltered by overhanging eaves, the sheltered section always corrodes faster. It's not hard to explain. The exposed screen gets wet by the rain and the salt spray—but it also dries rapidly, and the rain tends to wash away corrosion products. The sheltered screen does not get washed as thoroughly and does not dry as fast. And it corrodes a good deal more.

4. Surface finish is not nearly as important a factor in corrosion as it is often thought to be.

Unless the surface of a sheet of metal looks like the Himalaya range—with high peaks and deep crevasses; the finish will have little affect on the rate of corrosion. A polished surface may look better and have other advantages—but it won't necessarily protect against attack by salt water and salt air.

Much remains to be learned about corrosion—about how and why it occurs as well as about prevention.

There is as yet no index which will tell in advance exactly how a material will react to a given set of corrosive conditions. Titanium, for example, has turned out to be one of the most seaworthy of all metals, outperforming most stainless steels and giving even the special marine alloys a run for their laurels. This new metal was expected, on the basis of general chemical and physical properties, to do fairly well—but not anywhere near that well.

A single, accurate gage of the effect of water velocity on corrosion and erosion is yet to be found. Four separate tests are used at Harbor Island—and all four seem to be necessary to give even a moderately good picture. The encouraging thing, though, is that four tests *have* been devised which *do* give some indication. And there is every reason to expect that continuing research at Harbor Island and elsewhere will provide new and better answers to these and other questions as time goes on.

But even now, much can be done to minimize corrosion of products and plant equipment by taking advantage of the knowledge already gained.

As Frank LaQue points out, corrosion, like any other major prob-



Saves Typing Time . . .  
Stops Eye Fatigue!

## PANAMA "COPY-HOLDER" BOX

Panama-Beaver's exclusive patented carbon paper box has a built-in copy holder that flips open with a flick of the wrist. Keeps copy material upright and in full view . . . speeds work . . . cuts office costs. Folds up neatly under box lid after use. COSTS NOTHING EXTRA when you buy Panama-Beaver Carbon Paper—America's sharpest-writing, cleanest-erasing smudge-free carbon!

Have the Panama-Beaver representative near you show you the Copy Holder Box without obligation!

PANAMA-BEAVER  
Ribbons and Carbons

Coast to Coast Distribution

MANIFOLD SUPPLIES CO., 19 Rector St., N. Y. 6, N. Y.

Ebony Duplicating Carbons • Eye-Saver  
Unimasters • Lustra Colorful Inked Ribbons

## Management Men and their Methods

33 case studies of  
top executives—

put their ideas to work in  
your business—use them  
as a guide to reach the top

A gold mine of information on the techniques of executive leadership as used by some of America's most capable leaders in the last three decades.

Here you will find all aspects of leadership examined, reduced to the specific objectives of achieving better employee relations, more sales, and more efficient production.

The men and companies here chosen for study are those successful in overcoming business problems of broad significance and currently faced by other managements.

### A MODERN INDUSTRY BOOK

Edited by LUIS J. A. VILLALON

284 pages • 5½ x 8¼ • \$3.00

Order from Book Department,  
Dun's Review and Modern Industry,  
99 Church Street, New York 8, N. Y.



lem, is best attacked on an orderly, planned basis.

First, he suggests, be sure you know your adversary—know what kinds of corrosion are likely to be encountered, and how severe they are. Is moisture a problem? What chemicals are involved? Will the product be under continuous or intermittent attack?

Second, know the corrosion-resistant materials, and learn as much as you can about past experience with each of them. Take advantage of the lessons learned by such corrosion testing stations as Harbor Island—but don't rely too much on any one set of tests. As LaQue himself points out, the information gained at Harbor Island applies to the conditions present there—to sea water and salt air—and can not simply be taken over and applied blindly to vastly different corrosive conditions.

On the other hand, it should be noted that marine corrosion is a far greater and broader problem than most people realize. It is a rare product which does not at one time or another encounter marine atmospheres. Even if it is never shipped overseas, it's very likely to find it-

self living along the shore. Ten of our twenty largest cities, with a combined metropolitan area population of more than 30 million are located on one coast or another.

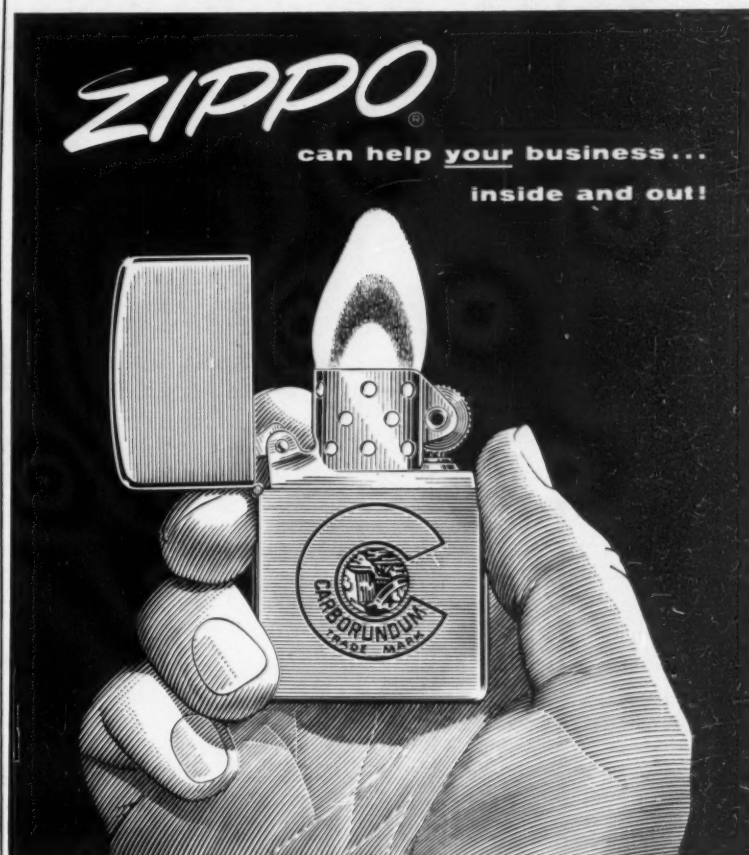
Third, learn the design features that can help minimize corrosion (elimination of cracks and crevices; preventing contact of dissimilar metals in cases where galvanic corrosion may be encountered, and so on). Know, too, how such fabrication techniques as welding affect corrosion.

Fourth, try out each suggested material and method, and actual equipment itself if possible, in the field.

Then, when the best possible solution or compromise is established, set-up standard specifications for materials, designing, fabrication method and use—and see that they are followed.

Corrosion control is not a simple matter. It is a mansided problem that requires constant, cooperative effort on the part of materials suppliers, product designers, fabricators, and the end user. It is, in other words, a problem that deserves top management attention and support.

THE END



**Zippo works with many firms, large and small. Here are some of the ways we can help you:**

**ADVERTISING!** Your trademark, or message, on a Zippo gets frequency of impact for years! Costs less than 1¢ per week! The average user will light his Zippo—and see your name—73,000 times!

**GIFTS!** Quality Zippos in many gracious models for the full range of your gift giving!

**INCENTIVES!** Zippos spark interest in incentive and suggestion programs... and lasting stimulation for managers, salesmen, distributors, retailers and others. Any message can be engraved!

**RECOGNITION!** Say "Thanks for a job well done" with Service Recognition Zippos. Use the wide range of Zippo models to improve plant safety, commemorate anniversaries... banquets... sports events... housewarmings... any outstanding occasion.

The famous Zippo guarantee, "Always works or we fix it free," assures you of a lasting gift of finest quality! Send coupon below for the full story!

**Zippo Manufacturing Company, Bradford, Pa., Dept. D-458**

Please furnish me information on how Zippos can help me with

☐ Advertising ☐ Gifts ☐ Incentives ☐ Recognition

Name \_\_\_\_\_ Position \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

## GET WHAT YOU PAY FOR!

**weigh  
and  
save  
with a**

## HYDROSCALE!



Hydroscale will save you many times its cost by providing an accurate check on everything you buy by weight! Easily attached to any crane or hoist, it lifts and weighs in one operation—eliminates extra handling, delays and guesswork.

With a Hydroscale you can make practical, cost-saving weight checks any place in your plant—anywhere your hoist will reach! There's a Hydroscale to fit your specific needs. 108 models, 500 to 100,000 lbs. capacity. Start cutting costs in your operation. Get the facts today!

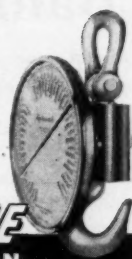
**WRITE TODAY FOR ILLUSTRATED BULLETIN!**

Hydroway Scales, Inc., 20616 West Eight Mile Road, Department 38, Detroit 19, Michigan.

**HYDROSCALE**

**LIFTS AND WEIGHS IN ONE OPERATION**

**Attractive Territories Available. Write for Details.**





## ***Puts your business on a cash basis***

If you are a manufacturer or a wholesaler with annual or potential sales of \$1,000,000 or more you can profitably use our kind of banking service to provide increased working capital without increased indebtedness or dilution of profits.

Why not investigate this modern approach to your money problems and learn how you can put your business on an all-cash basis, with wider opportunities for sales and profits.

More than four hundred companies in various industries are now profitably using our banking services.



## **Textile Banking Co., Inc.**

*Providing operational financing for manufacturers and distributors of furniture, apparel, electronics, plastics and textiles.*

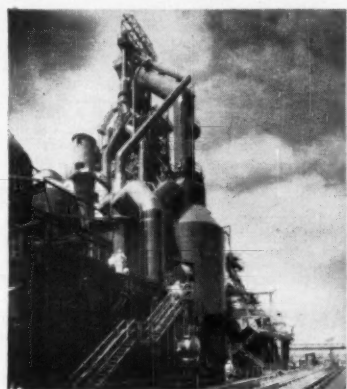
**55 Madison Avenue, New York 10, N. Y.**



# Here and There in Business

## WHAT'S NEW AS OBSERVED BY THE EDITORS

**Biggest blast furnace** with a rated capacity of 50,000 tons a month, goes into action at Great Lakes Steel Corporation, spotlighting booming steel production and use. Said to be the first furnace



with a hearth more than 30 feet in diameter, it's located on Zug Island in River Rouge, helps feed the company's cold rolled sheet plant at Ecorse, Mich. The Freyn Department of Koppers Company designed and built the unit, which towers 252 feet above the yard level and weighs almost 13,000 tons when fully charged.

**Electronic counter**, designed to measure frequency, speed, revolutions per minute, temperature, pressure, and many other factors, provides direct numerical readings and permits a period-of-count of either one second or one-tenth of a second. A portable unit, made by Hewlett-Packard Company, 395 Page Mill Road, Palo Alto, Cal., it weighs only 25 pounds, is priced at \$475. The unit has three accessory power supplies and provides connections for photocells and an external standard. A plug-in crystal time base is also available, at extra cost, for use where greater precision is desired.

**Booster ovens**, relatively small and inexpensive units that can be installed in front of existing heating units, can do a lot to improve efficiency and meet new production

demands without involving major revisions of the budget, says Jensen Specialties, Inc., Detroit, Mich. Pointing out that its *Pan-L-Heat* infrared oven "building blocks" can team up with almost any existing oven—gas, oil, or electric—Jensen suggests that they can do much to solve problems of increased output, longer heating times, and higher temperatures in metal finishing, textile processing, plastics molding, and many other industrial operations. Heater panels are made in a number of different sizes so that each installation can be engineered to meet specific space and temperature needs.

**Heating and cooling** units for industrial and commercial use are being designed in standard "packages" that are easier to specify and easier to install. Among the newest: Foster Wheeler Corporation's "economy series" of standardized

steam generators, made in nine sizes with capacities from 50,000 to 150,000 pounds per hour, steam temperatures to 950° fahrenheit, oil or gas firing.

American Blower Corporation's central-station, cabinet-type air-conditioners, in capacities from 600 to 48,000 cubic feet a minute, for air circulation, cooling and dehumidifying, heating, air cleaning, and humidification.

Both lines are designed for maximum flexibility of performance and installation.

**Freight savings**, plus faster unloading, greater ease of handling within the plant, and reduction of product contamination are among the claims made by Tote System, Inc., Beatrice, Neb., and Shippers' Car Line Corp., (subsidiary of ACF Industries) for their new rail unit for bulk materials. It consists of 28 separate, removable containers that



*When  
management  
decides . . .*

"We'll just have to cut down on ice cream," may be the decision of this board meeting, but the future is bright. The nine partners of the Kinder Company, South Milwaukee, Wis., have just had a look at their 1954 annual report (a simplified rebus-type) and there are no profits to be divided—they have been plowed back into the company for tooling and engineering. Owned by nine children (aged two and a half to fifteen years),

Kinder, German for children, manufactures small battery-powered motors for toy cars, walking dolls, and the like, and also puts out a range-finder equipped stereo-camera, has more products lined up for future production. Two families comprise the ownership—the Van Fleets (four children) and the Kyles (five children). John M. Van Fleet, father, manages the company in trust. The board members usually divide one-third of the profits.



## NEATER—BETTER AT LESS COST

with HANSEN one hand TACKER

**FASTER!** Zip-zi! Fast as you grip. Tacks screens on TV-radios—plastic dial plates—gimp bindings on chairs, etc. etc.

**BETTER!** Balanced design—positive action—single-leg or double-leg tack-points—neater, better, precision tacking and fastening.

**LESS COST!** No waste! Tackpoints come in economical strips. A big saving in labor costs over old-fashioned tack hammer methods.



Packed 5 Vest-Kits per Box of 5,000 staples.

## HANSEN VEST-KIT— AS NEAR AS VEST POCKET

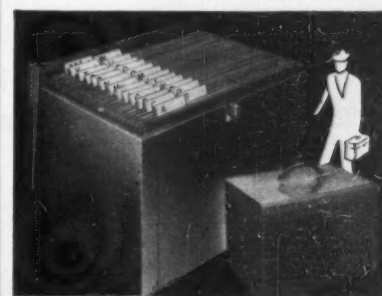
New convenience, portability and speed combined with economy with Hansen VEST KIT. Modern way to carry handy supply of staples, 3/16" and 1/4" lengths.

36 Models  
80 Staple Sizes



REQUEST  
BOOKLET

**A.L. HANSEN MFG. CO.**  
5034 RAVENSWOOD AVE. CHICAGO 40 ILLINOIS



## Oxford PENDAFLEX® "CARRYFILE"

Take your papers anywhere!

Features new style HANGING FOLDERS

**Executives:** Your stylish "traveling office", for reports, letters, minutes.

**Salesmen:** Carry price books, photos, testimonials, samples, other sales data.

**Home "Managers":** Perfect for household papers—bills, budget, taxes, insurance.

Made of lightweight steel, tan finish. Brass lock, leather handle, piano-hinge. Holds 25 Pendaflex celluloid-tab hanging folders, which can't slump or sag. Size 9" x 13" x 10 1/2" high.

Clip coupon for catalog, name of dealer

Oxford Filing Supply Co., Inc.  
34 Clinton Road, Garden City, N. Y.

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State \_\_\_\_\_

## Gets incoming mail distributed sooner...

and lets everyone start on the day's work earlier. A Pitney-Bowes MailOpener does away with the delay of hand-tearing or dagger-slitting methods... saves many precious minutes at the start of each work-day. Ask your nearest PB office to demonstrate. Or write for free illustrated booklet and postal rate chart.

PITNEY-BOWES, INC., 1554 Walnut St., Stamford, Conn. Originators of the postage meter. 94 offices in U.S. and Canada.

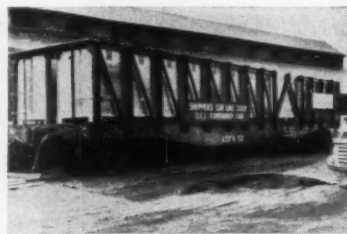
### PITNEY-BOWES MAILOPENER

**FREE:** Handy desk or wall chart of postal rates, with parcel post map and zone finder.



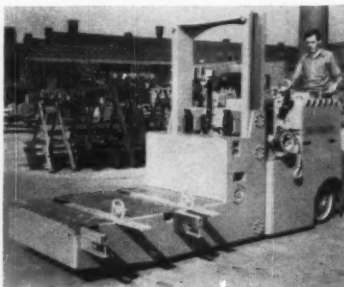
*This model LH safely, easily trims a hairline edge off any kind or size of envelope... opens a whole morning's mail in a jiffy. Electric models for larger offices.*

lock in place on a railroad flat car, and are counted as a part of the car itself in computing freight charges. Thus, the companies say, the tare weight of the containers is not charged in either direction. An extra advantage for companies which do not have their own railroad sidings is the fact that the containers



are readily removed to, and transported by, motor trucks. The new units, of course, share with other LCL containers the advantages of permitting mixed shipments, and the possibilities for use in the plant as feed hoppers for processing machines.

*Space saving* is a key feature of Automatic Transportation Company's new die-handling truck. Retractable extension arms, drums, and sheaves, bring its over-all width down to 50 inches, and it is de-



signed so that it can be unloaded from either side, or from the end of the platform. These features, says ATC, should make it possible to place metalworking presses closer together and still handle dies with ease—conserving valuable working space.

*Fingerprint remover* for metal parts is said to be unusually effective in preventing corrosion of highly polished surfaces which must be manually handled. E. F. Houghton & Company, Philadelphia 33, Pa., which makes the new *Cosmo-line 1070* fingerprint remover, says it is particularly effective on non-ferrous metal parts and bimetallic

## For Easiest, Most Economical Systematic RECORD STORAGE



Keep expensive steel file space active by transferring inactive records to Liberty Storage Boxes. Liberty Boxes are best because—

- Highest quality materials throughout
- Systematic labeling makes locating any record easy
- Records are protected against dust and spilling
- 25 Standard Stock Sizes... special sizes made to order
- Patented Closure is easy-to-use, keeps records clean
- Take years and years of rough usage

**Sold by all leading stationers**  
Send today for **FREE** Catalog picturing and describing economical record storage products for every business.

**BANKERS BOX COMPANY**  
720 S. Dearborn Street • Chicago 5, Illinois

## A clear explanation of the traffic manager's work

- This book provides a clear working understanding of the fundamentals of industrial transportation... covering the entire field from the practical operating viewpoint of an industrial traffic manager who has spent more than 20 years in traffic management.

### PRACTICAL HANDBOOK OF INDUSTRIAL TRAFFIC MANAGEMENT

By **RICHARD C. COLTON**

Vice President, Lykes Brothers Company, Inc.

6x9 1/4 • 384 pages, 63 illus., \$6.00

### A MODERN INDUSTRY BOOK

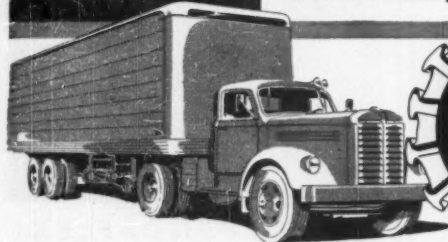
- The material in this book provides both valuable basic information for the beginner and a broader understanding for the professional. Its coverage is so broad and is presented in such an easy-to-grasp, factual manner, the reader can obtain in a relatively short time a fundamental understanding of this difficult and technical profession.

Separate treatment is given to rail, motor, water, freight forwarder, air and express service. The book covers freight rates, bills of lading, freight claims, a complete review of export and import, passenger traffic from a "travelling-on-company-business" viewpoint... and many other topics.

Order from Book Department,  
Dun's Review and Modern Industry,  
99 Church Street, New York 8, N.Y.

IF YOUR FIRM  
OPERATES  
ITS OWN TRUCKS...

**Tachographs**  
can improve your



The Tachograph is a recording speedometer for trucks. It permanently records on a wax-coated chart when truck started, when it stopped, when it idled, speed and distance traveled.

Tachographs just naturally make drivers safety-conscious... help them acquire good driving habits. Good driving habits mean fewer accidents. You save money in less "down-time," lower insurance premiums.

Best of all, a good driver is an excellent advertisement for your firm as well as the whole trucking industry.

Send this coupon today and learn more about how the Tachograph can help you make your trucking operation safer, more profitable, more efficient.

**Wagner Electric Corporation** 6439 Plymouth Ave., St. Louis 14, Mo. 555-9

Please send a copy of Bulletin SU-3.

Name and Position \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

We operate \_\_\_\_\_ Vehicles

**TACHOGRAPH**  
the recording  
speedometer  
Distributed only by  
**WAGNER ELECTRIC  
CORPORATION**





### Register it Emblematically!

You're proud of your trade mark . . . why not merchandise it to its greatest advantage . . . on I & R jewelry awards.

Attractive and practical, our jewelry with your trade mark or product reproduction makes the ideal gift for anniversaries, sales achievements and service awards and it registers your trade mark every time it's worn!

We would welcome the opportunity to put yours in front of people's eyes. Write for further information.

**IRONS & RUSSELL COMPANY**

*Emblem Manufacturers Since 1861*

95 Chestnut Street Providence, R. I.

No. 13 in a series

## BATON

builds for

**Michael Flynn  
Manufacturing Co.**



**Baton Construction Corp.  
PHILADELPHIA**

### Management Responsibility

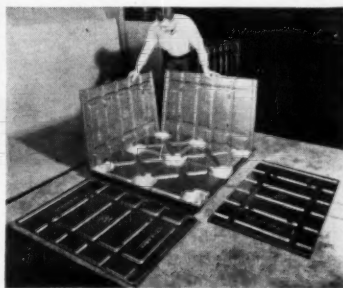
Increased profits and improved productivity can be obtained through advanced materials handling.

*Better Handling* appearing in the September issue of DR&MI reviews the challenge every management man must meet.

Be sure to read it.

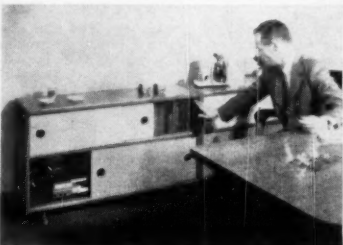
assemblies, and dissolves off readily before final finishing.

*New idea* in shipping containers is this lightweight, all-steel knock-down unit now being made by Ackermann Manufacturing Company, Wheeling, W. Va. Combining a steel pallet with demountable



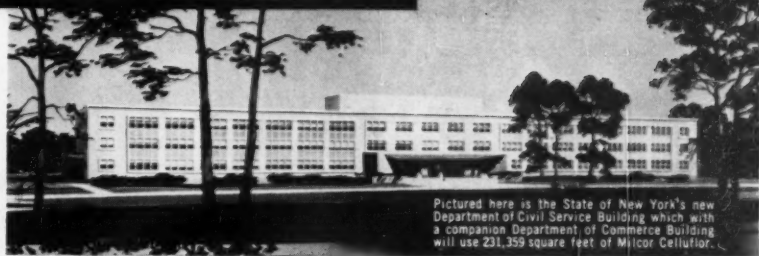
sides and cover, it can be nested and tiered, is said to support static loads of 10,000 pounds or more. (The pallet alone will hold 60,000 pounds). Ackermann is now making it in three standard sizes, weighing 85, 99½, and 122 pounds.

*Colorful cabinets*, featuring lightweight sandwich construction (see July, page 63), durable finishes, and ease of assembly are offered by Brunswick-Balke-Collender Company, Chicago, Ill. The cabinets are designed with standard panels that make it possible to assemble sections as desired, with interchangeable casters, legs, bases, and wall mountings. The cabinets themselves are finished in sage gray, but sliding doors may be had in coral, blue, or yellow. The panel "sandwiches" are made of tempered



State Architect  
Associate Architects  
General Contractor  
Electrical Contractor  
Heating Contractor  
Sanitary Contractor  
Escalator Contractor  
Elevator Contractor

Cornelius J. White, Albany, N. Y.  
Kenneth G. Reynolds and Associates, Albany, N. Y.  
Brown-Turner Co., New York City  
George J. Martin & Son, Inc., Albany, N. Y.  
E. W. Tompkins Co., Inc., Albany, N. Y.  
Trojan Hardware Co., Inc., Troy, N. Y.  
Westinghouse Electric Corp., New York City  
Otis Elevator Co., Albany, N. Y.



Pictured here is the State of New York's new Department of Civil Service Building which with a companion Department of Commerce Building will use 231,359 square feet of Milcor Cellufloor.

## AGAIN IT'S MILCOR CELLUFLOOR

— this time for two, new State of New York office buildings



**DURING CONSTRUCTION**

Cellufloor's tough, TI-CO galvanized skin doesn't crack or flake, even during the forming of Cellufloor cells. This protection resists the abrasion of heavy traffic and storage during construction.

TI-CO galvanizing protects after construction, also. The conditions inside Cellufloor's cells remain the same, regardless of time, temperature, or humidity. Structural strength continues unchanged.



**—AND THROUGH THE YEARS**

Architects design today to meet tomorrow's need for extra circuit capacity

The Department of Civil Service Building, shown above, starts the State of New York's unique State Campus Project in Albany, N. Y.

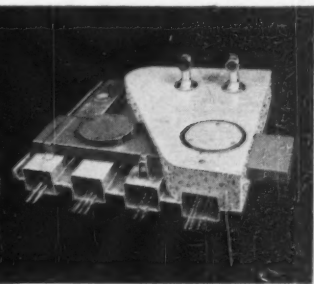
It is significant that in considering the most modern methods and materials the architects specified cellular steel flooring for this structure — and for the Department of Commerce Building in the same project, as well. Milcor Cellufloor fully meets their requirements.

Cellufloor's close-cell design provides electrical flexibility. And Milcor Cellufloor steel panels speed and simplify construction. They reduce costs and permit earlier occupancy of a building.

Ask your architect or general contractor about Milcor Cellufloor. Latest bulletins available from us upon request.

**MILCOR® CELLUFLOOR**

Milcor Cellufloor offers unlimited electrical flexibility. Cells on 5" centers permit placing of outlets anywhere on floor, at any time.



## INLAND STEEL PRODUCTS COMPANY

4049 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

BALTIMORE 5, MD., 5300 Pulaski Highway • BUFFALO 11, N. Y., 64 Rapin St. • CHICAGO 9, ILL., 4301 S. Western Blvd. CINCINNATI 25, OHIO, 3240 Spring Grove Ave. • CLEVELAND 14, OHIO, 1541 E. 38th St. • DETROIT 2, MICH., 690 Amsterdam Ave. • KANSAS CITY 41, MO., P. O. Box 918 • LOS ANGELES 58, CALIF., 4807 E. 49th St. • NEW YORK 17, N. Y., 230 Park Ave. • ST. LOUIS 10, MO., 4215 Clayton Ave.

M-162A



## MORGANITE DOES THIS JOB BETTER

Self-lubricating Morganite pump vanes, whirling inside a cylinder at peripheral speeds up to 2,000 ft. p.m. pumping fluids, gases or air, will deliver these elements free of contamination. There is no discoloration, no tainted flavor, no foreign odor. Morganite, a carbon graphite composition, is an inert material, resistant to the corrosive attack of most acids, alkalis and salts. No oil or grease is needed for lubricating in either wet or dry running. Smaller clearances are possible because Morganite parts will not shrink or swell, greatly increasing pump efficiency. Morganite vanes, end plates, seal noses, rings, bearings, valves, pistons are perfectly suited to processing equipment in the food, chemical and textile industries. Morganite can help you overcome contamination and lubrication problems; cut costs, reduce maintenance. Write for Morganite's Carbon Specialties catalogue.

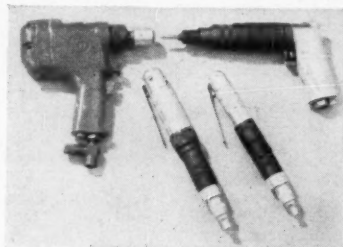


**Morganite**  
INCORPORATED

48TH AVENUE, LONG ISLAND CITY 1 NEW YORK



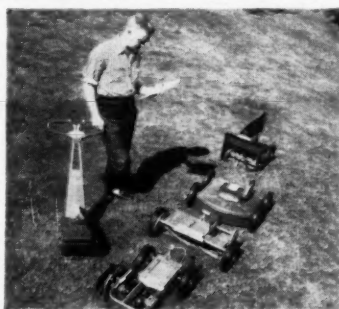
hardboard with a lightweight but rigid honeycombed phenolic-impregnated Kraft core. Top surfaces are protected by a melamine coating, and panel and shelf edges are surfaced with ethyl cellulose plastic. The one-shelf unit, on legs, is priced at \$48.75.



**Less noise** and better control of torque were the twin aims of Chicago Pneumatic Tool Co., in designing its new line of power screwdrivers. To achieve them, it has developed a new type of clutch, using a permanent magnet in place of the standard ratcheting system. The magnet, Chicago Pneumatic says, makes it possible to set and hold the clutch jaws at the designed degree of torque; and, because the design keeps the clutch jaws from hitting against each other, it does

much to cut down on operating noise. The clutch is adjusted by screwing the magnet in and out of the upper clutch jaw. Chicago Pneumatic is making its new *Magnamatic* torque-controlled screw drivers in thirteen models, of which four are pictured here.

**New design** in powered equipment is the "Power Handle," developed by Toro Manufacturing Corp., Minneapolis, Minn., to permit motorization of several of the yard and garden units it makes (lawn mower, snow plow, trimmer-edger, and the like). It weighs 39 pounds, is priced at \$89.95 (other components have their own prices). Industrial equipment makers might borrow the idea.



## DUN'S REVIEW and Modern Industry

99 Church Street, New York 8, N.Y.

NORMAN C. FIRTH, *Editor and Publishing Director*  
VIOLA V. ANDERSON, *Administrative Assistant*

RICHARD L. KRAYBILL, *Managing Editor*

CLARENCE SWITZER, *Art Director* H. E. BLANK, JR., *Consulting Editor*  
ANNESTA R. GARDNER, *Industrial Editor* H. LORRAINE CARSON, *Business Conditions Editor* JAMES K. BLAKE, *Marketing Editor*  
ALFRED G. LARKE, *Employer Relations Editor* JOSEPH A. D'ANDREA, *Statistician*

*Associate Editors:* JOHN DREXLER, THOMAS KENNY

*Contributing Editors:* EDWIN B. GEORGE, A. M. SULLIVAN, RALPH J. WATKINS  
*Production:* ROY PARANSKY

WALTER F. GRUENINGER, *Circulation Director*

ALVAH B. WHEELER, *Advertising Director*

ALEX J. DUGHY, *Sales Manager*

*New York (99 Church St.):* GEORGE MATURNIAK, MARK McDONALD,  
FREDERIC A. EWALD, BERT BERNE

*Chicago (300 W. Adams St.):* JOHN KROM, RALPH O. MCGRAW  
*Cleveland (Terminal Tower):* CARL YODER  
*Detroit (Cadillac Tower):* CARL NEPPACH, JR.

*Pacific Coast (57 Post St., San Francisco, and 2330 W. Third St., Los Angeles):*  
ROBERT W. WALKER CO.

Published monthly by Dun & Bradstreet Publications Corporation. J. Wilson Newman, President; Norman C. Firth, Alvah B. Wheeler, Alex J. Dughy, Vice-Presidents; Arthur Garrett, Treasurer; Owen A. Sheffield, Secretary; Viola V. Anderson, Assistant Secretary. Directors: Fred H. Brockett, Alex J. Dughy, Norman C. Firth, Roy A. Foulke, Arthur Garrett, J. Wilson Newman, Alvah B. Wheeler, and Arthur D. Whiteside.

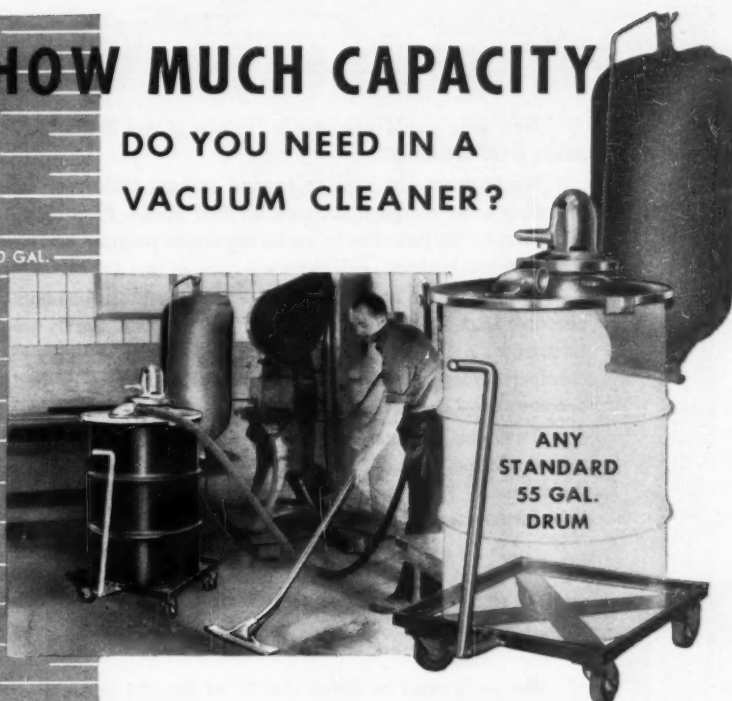
## HOW MUCH CAPACITY

DO YOU NEED IN A  
VACUUM CLEANER?

220 GAL.

110 GAL.

55 GAL.



## THE TORNADO® JUMBO CONVERSION GIVES YOU ALL YOU NEED

No matter what capacity you need in an industrial vacuum cleaner, the Tornado Jumbo Conversion is your answer. It's a powerful Tornado suction motor unit with a filter bag and cover plate that fits any standard 55 gallon drum you may have or can buy locally.

Tornado's powerful suction (air speeds up to 325 M.P.H.) picks up dust, dirt, chips or liquids with equal ease. Available in  $\frac{3}{4}$ , 1 or  $1\frac{1}{2}$  H.P. sizes at very reasonable prices. What's more, the motor unit removes to become a powerful portable blower for cleaning motors or machinery.



No need to stop working to empty the tank with a Tornado Jumbo. Just move the unit from the full drum to an empty and keep right on cleaning.

WRITE FOR TORNADO BULLETIN 694 TODAY!

**BREUER ELECTRIC MFG. CO.**  
5106 NORTH RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS



*How long would you stay in business if you limited sales effort to premium rated accounts?*

No business can hope to expand without taking the calculated risk of including some marginal accounts on their books. Promising marginal enterprises can be the incentive to a sales expansion program and to the problem of replacing lost business — if there is a basis in fact for extending credit terms.

Isn't this your experience too — most premium accounts were marginal accounts once — and some of them will be again. Surely we can hope that tomorrow's list of top-grade customers will include a goodly number of those considered marginal today. The key to the selection of desirable marginal accounts is — *watch the trend.*

To obtain an indication of how marginal businesses will fare over a period of time, Dun & Bradstreet recently completed a pilot survey\* tracing the course of 100 concerns assigned marginal ratings in 1945. Here is how time sorted them out.

- *More than twenty-five of these concerns have today — ten years later — improved substantially both their capital strength and credit position.*
- *Twenty-two others have shown improvement in one of these respects.*

*But* — it must be noted that 35 of the 100 concerns are no longer in business. The one thing exhibited above all by this study was the proneness to change. Only one of the 100 concerns has the same rating in 1955 that it had in 1945.

It's clear that a sizable profit potential abides in border-line cases, a profit potential that can lay a firm foundation for tomorrow's sales structure. But it is also clear that care must be exercised and current information kept on the customers to be encouraged as they evolve from marginal ratings toward *good* and *premium*.

*Dun & Bradstreet credit reports and the Dun & Bradstreet Reference Book can arm credit judgment with up-to-date facts for wise choices.*

Dun & Bradstreet reports give the history of a business, the experience and past record of its owners, information on its operating methods, its current financial status, its banking relations, and its payments to trade suppliers. As reports are revised they are sent automatically for one full year to subscribers interested in a case. The Reference Book, listing over 2,600,000 manufacturers, wholesalers, and retailers in the United States, is revised every 60 days. Each new Book contains better than 100,000 changes in credit ratings, specially signalled for the user.

Selling premium accounts takes no extraordinary skill, but selecting the future successes — that's another matter. Perhaps the greatest test of a credit man's ingenuity lies in his encouragement of marginal risks. Dun & Bradstreet is prepared to serve the credit man with pertinent facts, experienced counsel, and nation-wide investigation facilities. Be sure to call on us.

\*If you would like a copy of the complete survey, just write us. Names of companies will not appear, of course.

**BUILD SOLIDLY**

**FOR THE**

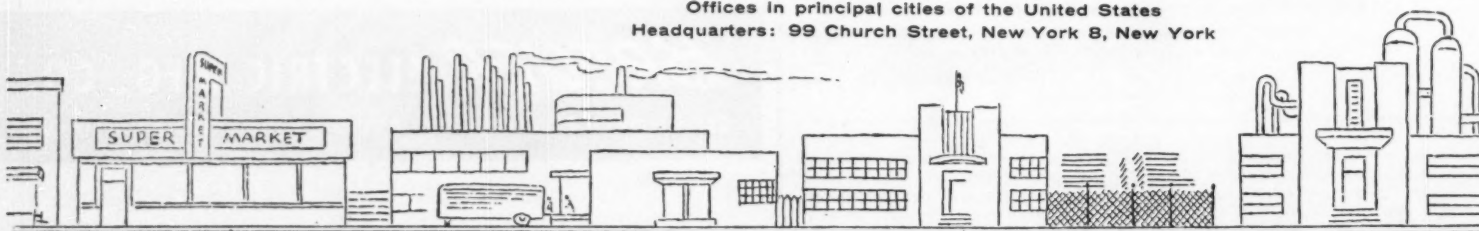
**FUTURE**

**ON**

**MARGINAL  
ACCOUNTS**

**Dun & Bradstreet, Inc.**

Offices in principal cities of the United States  
Headquarters: 99 Church Street, New York 8, New York





## ADVERTISING INDEX

ALAN WOOD STEEL COMPANY..... 5	INLAND STEEL PRODUCTS COMPANY... 85
Doremus-Eshleman Company	Hoffman & York, Inc.
ALLEGHENY LUDUM STEEL CORPORATION..... 56	INTERNATIONAL NICKEL COMPANY, INC., THE..... 24
Walker & Downing, General Agency	Marschalk & Pratt Co., Inc.
ALLIED RESEARCH PRODUCTS, INC..... 4	IRONS & RUSSELL COMPANY..... 85
Emery Advertising Corporation	Knight and Gilbert, Inc.
ALLIED STEEL AND CONVEYERS, INC. ALLIED AUTOMATION DIVISION..... 16	ISLAND EQUIPMENT CORP..... 78
Schneider Studios	Givaudan Advertising, Inc.
ALLIS-CHALMERS MFG. CO..... 29	LOCKWOOD-GREENE ENGINEERS, INC..... 50
Compton Advertising, Inc.	The House of J. Hayden Twiss
AMERICAN APPRAISAL COMPANY, THE..... 15	MAGLINE, INC..... 58
The Buchen Company	Rossi and Company
AMERICAN PULLMAX COMPANY, INC..... 55	MAGNESIUM PRODUCTS OF MILWAUKEE..... 15
Grimm & Craigie, Inc.	Morrison-Greene-Seymour, Inc.
AMERICAN TELEPHONE & TELEGRAPH COMPANY..... 90	MAHON, R. C., COMPANY, THE..... 14
N. W. Ayer & Son, Inc.	Anderson, Inc.
AMERICAN TRUST COMPANY..... 89	MANIFOLD SUPPLIES CO..... 80
McCann-Erickson, Inc.	Richard & Gunther, Inc.
ARNOLT CORPORATION..... 20	MARSH STENCIL MACHINE CO..... 58
Scantlin & Company	Roman Advertising Company
BAKELITE COMPANY, A DIVISION OF UNION CARBIDE & CARBON CORPORATION..... 6, Cover III	McCLOSKEY COMPANY OF PITTSBURGH..... 72
J. M. Mathes, Inc.	Bachman, Kelly & Trautman, Inc.
BAKER-RAULANG CO., THE..... 31	METAL ARTS CO., INC..... 61
G. M. Basford Company	Hutchins Advertising Company, Inc.
BANKERS BOX COMPANY..... 84	MILWAUKEE DUSTLESS BRUSH CO..... 16
Frank C. Jacobi Advertising	Al Herr Advertising Agency Inc.
BARRETT-CRAVENS COMPANY..... 76	MONSANTO CHEMICAL COMPANY, PLASTICS DIVISION..... 74
The Buchen Company	Needham, Louis and Brorby, Inc.
BATON CONSTRUCTION CORP..... 16, 52, 58, 62, 76, 85	MORAINÉ PRODUCTS DIVISION, GENERAL MOTORS CORPORATION..... 70
The Roland G. E. Ullman Organization	Campbell-Ewald Company
BORG-WARNER CORPORATION..... 52	MORGANITE INCORPORATED..... 86
Rogers & Smith	Hill and Devore
BREUER ELECTRIC MFG. CO..... 87	MUELLER BRASS CO..... 11
Grimm & Craigie, Inc.	Price, Tanner & Wilcox, Inc.
BURROUGHS CORPORATION..... Cover II	MURRAY, D. J., MFG. CO..... 18
Campbell-Ewald Company	R. C. Breth, Inc.
CAMBRIDGE WIRE CLOTH CO., THE..... 54	NATIONAL TRUCK LEASING SYSTEM..... 12
Emery Advertising Corporation	W. S. Kirkland Advertising
CHASE MANHATTAN BANK, THE..... 65	NIAGARA MOHAWK POWER CORPORATION..... 21
Albert Frank-Guenther Law, Inc.	Batten, Barton, Durstine & Osborn, Inc.
CHRYSLER CORPORATION, AMPLEX DIVISION..... 78	NICKEL PLATE ROAD..... 54
Ralph Sharp Advertising, Inc.	Fuller & Smith & Ross, Inc.
CITIES SERVICE COMPANY..... 59	OXFORD FILING SUPPLY CO., INC..... 85
Albert Frank-Guenther Law, Inc.	Joseph Reiss Associates
COLUMBIA RIBBON AND CARBON MFG. CO., INC., COLITHO DIVISION..... 69	PITNEY-BOWES, INC..... 20, 84
E. M. Freytag Associates, Inc.	L. E. McGivena & Co., Inc.
CONSUMERS POWER COMPANY..... 73	PRODUCTION ENGINEERING SHOW..... 80
Commonwealth Services, Inc.	James R. Flanagan Advertising Agency
CRAMER POSTURE CHAIR CO., INC..... 62	RECORDAK (SUBSIDIARY OF EASTMAN KODAK COMPANY)..... 63
D. L. Goldsberry & Co.	J. Walter Thompson Company
CUSTOM DIE COMPANY..... 48	REMINGTON RAND, INC..... 19
Capital Advertising, Inc.	Leefer Advertising Agency, Inc.
CUTLER-HAMMER, INC..... 22	REN-ITE PLASTICS, INC..... 72
Kirkgasser-Drew	Betteridge & Company
DRAKE, STARTZMAN, SHEAHAN AND BARCLAY..... 16	REO MOTORS, INC., SUBSIDIARY OF BOHN ALUMINUM AND BRASS CORPORATION..... 8-9
Marsteller, Rickard, Gebhardt and Reed, Inc.	Zimmer, Keller & Calvert, Inc.
DUN & BRADSTREET, INC..... 88	REVOLVATOR CO..... 52
DYNAMIC FILMS..... 76	LaPorte & Austin, Inc.
Ben-Mar Agency, Inc.	RAISING PAPER COMPANY..... 77
EAGLE-PICHER COMPANY, THE..... 49	McAdams & Baird, Inc.
The Ralph H. Jones Co.	RONSON CORPORATION..... 35
EASTMAN KODAK COMPANY (AUDIO-VISUAL)..... 57	Norman, Craig & Kummell, Inc.
Charles L. Rumrill & Co., Inc.	SIGNODE STEEL STRAPPING CO..... 12
ECONOMY ENGINEERING CO..... 7	The Buchen Company
Kreicker & Meloan, Inc.	SKELLY OIL COMPANY..... 64
EXECUTONE, INC..... 15	Bruce B. Brewer & Co.
The Joseph Katz Company	SPARKLER MANUFACTURING CO..... 68
FELT & TARRANT MANUFACTURING CO., COMPTOMETER DICTATION DIVISION..... 30	Kreicker & Meloan, Inc.
Tim Morrow Advertising	TEXTILE BANKING COMPANY, INC..... 82
FIRST NATIONAL CITY BANK OF NEW YORK, THE..... 79	L. E. McGivena & Co., Inc.
Albert Frank-Guenther Law, Inc.	TIMKEN ROLLER BEARING COMPANY, THE..... Cover IV
FORCE, WM. A., & COMPANY, INC..... 18	Batten, Barton, Durstine & Osborn, Inc.
Philip I. Ross Co.	TORRINGTON MANUFACTURING COMPANY, THE..... 32
GENERAL AMERICAN TRANSPORTATION CORPORATION, PLASTICS DIVISION..... 47	Graceman Advertising Inc.
Weiss and Geller, Inc.	UNITED STATES STEEL CORPORATION..... 67
GENERAL BOX COMPANY..... 53	Batten, Barton, Durstine & Osborn, Inc.
The Buchen Company	VANTAGE PRESS, INC..... 58
GLICKMAN, LOUIS J..... 52	Metropolitan Advertising Company
Pace Advertising Agency, Inc.	VEEDER-ROOT, INC..... 60
HANSEN, A. L., MFG. CO..... 83	Sutherland-Abbott
J. M. Haggard, Advertising	VICKERS INCORPORATED..... 17
HEINN COMPANY, THE..... 71	Witte & Burden
Paulson-Gerlach & Associates, Inc.	WAGNER ELECTRIC CORPORATION..... 84
HELLER, WALTER E., & COMPANY..... 66	Arthur R. Mogge, Inc.
R. M. Loeff Advertising, Inc.	WEST BEND EQUIPMENT CORP..... 18
HERTZ TRUCK RENTAL SYSTEM..... 51	Morrison-Greene-Seymour, Inc.
Campbell-Ewald Company	WEST DISINFECTING COMPANY..... 13
HILL, R. O. H., INC..... 62	G. M. Basford Company
Reed-Warren	WESTON, BYRON, COMPANY..... 69
HUDSON PULP & PAPER CORP..... 10	Walter B. Snow & Staff, Inc.
Lewin, Williams & Saylor, Inc.	WOOD, R. D., COMPANY..... 3
HYDROWAY SCALES, INC..... 68	Harris D. McKinney, Inc.
Rossi and Company	WOODCO CORPORATION..... 75
	Krate-Basch Associates, Inc.
	ZIPPO MANUFACTURING COMPANY..... 81
	N. W. Ayer & Son, Inc.



## Statement of Condition

JUNE 30, 1955

### Resources

Cash on Hand and in Banks	\$ 247,222,295.03
U. S. Government Obligations	417,432,656.35
State, County, and Municipal Bonds	68,322,402.65
Other Bonds and Securities	25,288,166.68
Stock in Federal Reserve Bank	2,400,000.00
Loans and Discounts	693,416,969.61
Bank Premises and Equipment	12,662,145.18
Other Real Estate	1.00
Customers' Liability under Acceptances	938,989.98
Accrued Interest Receivable and Other Assets	9,676,679.72
<b>Total Resources</b>	<b>\$1,477,360,306.20</b>

### Liabilities

Deposits	\$1,358,009,894.33
Acceptances Outstanding	947,976.74
Reserve for Unearned Discount	9,971,350.95
Reserve for Interest, Taxes, etc.	8,735,577.07
Other Liabilities	1,809,608.47
<b>Capital Funds:</b>	
Capital Stock	27,812,500.00
Surplus	52,187,500.00
Undivided Profits	17,885,898.64
<b>Total Liabilities</b>	<b>\$1,477,360,306.20</b>

U. S. Government and other securities carried at \$162,298,038.73 are pledged to secure U. S. Government Deposits, other public funds, trust deposits, and for other purposes as required or permitted by law.

### BOARD OF DIRECTORS

Frazer A. Bailey	Henry Q. Hawes	Donald Maclean
Wakefield Baker	William L. Keady	J. W. Mailliard, III
Kenneth K. Bechtel	Harris C. Kirk	Donald H. McLaughlin
Colbert Coldwell	J. R. Knowland	Robert W. Miller
Peter Cook, Jr.	Daniel E. Koshland	George C. Montgomery
Paul L. Davies	Roger D. Lapham	Herman Phleger
Charles Elsey	James K. Lochead	Mark R. Sullivan
B. R. Funston		Ben F. Woolner

Member Federal Deposit Insurance Corporation

AMERICAN TRUST COMPANY  
BANKING Since 1854

Head Office: San Francisco

BANKING OFFICES THROUGHOUT NORTHERN CALIFORNIA



## Call-Collect Plan brings 31 orders in 29 days

**Long Distance calls costing only \$20 ring up sales of \$1,537**

Recently a distributor of doctor's supplies invited out-of-town customers to place their orders by Long Distance—collect.

During the first 29 days, 31 orders worth \$1,537 were received by Long Distance. The cost of the calls: \$20.

These figures are typical of the big value and small cost of the Call-Collect Plan. You can prove that it pays in *your* business by trying it—and keeping a record of results.

All you have to do to set up such a plan is to let your out-of-town customers know they can telephone their orders to you—collect. Your salesmen can tell them. You can write them a letter. Or you can use specially imprinted telephone stickers which we furnish you free.

A telephone company representative will gladly help you work out the details. Just call your Bell Telephone Business Office today.

BELL TELEPHONE SYSTEM



### LONG DISTANCE RATES ARE LOW

Here are some examples:

New York to Philadelphia .	50¢
Cleveland to Indianapolis .	90¢
Chicago to Pittsburgh . . .	\$1.15
Boston to Detroit . . . .	\$1.40
Washington, D. C., to San Francisco . . . .	\$2.50

These are the daytime Station-to-Station rates for the first three minutes. They do not include the 10% federal excise tax.

**Call by Number. It's Twice as Fast.**





# Instant Breakfasts by the **Pouchful**



Packages made of  
pouch materials  
produced by  
**Riegel Paper Corp.**,  
New York 16, N. Y.

**protected by**

**P**ancake flour in portion packs... That's how restaurants and lunch counters are stepping up service with powdered foods that are factory-fresh.

BAKELITE Brand Polyethylene is an important ingredient in packaging these products. It coats the inner side of the special glassine pouches, gives them a fast, tight heat-seal despite dusty contents. Tough and flexible, it increases wall strength. Moisture-resistant, it keeps powders dry. Tasteless and odorless, it won't affect flavor or aroma.

Wherever you see BAKELITE Poly-

ethylene used, you'll find a packaging improvement. It increases toughness, strength and gloss when added to wrapper waxes. It's formed into film that's fabricated into strong, tear-resistant, transparent bags for fruit and vegetables. It's molded into squeeze bottles that won't break if dropped, and whose light weight cuts shipping costs.

Find out whether your package can be improved. You can learn more about BAKELITE Polyethylene by writing Dept. HR-42.

**Vinyl, Polyethylene, Polystyrene, Phenolic, and Epoxy Resins for Packaging**



**BAKELITE COMPANY**, A Division of Union Carbide and Carbon Corporation **UCC** 30 East 42nd Street, New York 17, N. Y.  
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

Keeping America on the GO...with **TIMKEN** Tapered Roller Bearings



*Now 5 miles*  
~~1/3 mile~~ of "Roller Freight" cars to speed  
Western Maryland shipments

EVER notice that most freight cars have boxes with hinged lids on the ends of every axle? They're what railroad men call journal boxes, and they contain oil-soaked packing to lubricate the turning axles. Well, you won't find boxes like that on these Western Maryland freight cars. The axles of these cars roll smoothly on Timken® tapered roller bearings instead of sliding on old-style friction bearings.

That's the difference between ordinary freight cars and "Roller Freight". Shipments that go "Roller Freight" ride just as smoothly and swiftly as a passenger in a crack streamliner.

We ran the original version of this advertisement last year when Western Maryland put the above 50 roller-bearing-equipped hopper cars in operation. Since then, they have added 50 seventy-ton covered hoppers and 17 "piggyback" flat cars on Timken bearings—and an additional 500 "Roller Freight" cars are now on order.

"Roller Freight" cars speed deliveries for Western Maryland shippers by eliminating the number-

one cause of freight train delays, the hot box problem. Unlike cars with friction bearings, "Roller Freight" cars provide delay-free dependability that gets shipments where they're going—on time, help keep customers happy.

Much as "Roller Freight" means to shippers, it can mean still more to the railroads. When they team together to put roller bearings on all freight cars, they'll save on lubrication, labor, inspection, and repairs. An estimated \$190 million a year!

Timken bearings are designed and precision manufactured to have true rolling motion. To insure their quality, we use our own nickel-rich Timken alloy steel. We're the only bearing manufacturer in the country that makes its own steel. That's why only Timken bearings roll so true, have such quality thru-&-thru. The railroads, like all industry, choose Timken bearings to keep America on the go. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".



This trainman is holding two Timken tapered roller bearings as they are mounted on the end of a freight car's axle to eliminate the hot box problem, cut operating and maintenance costs to a minimum.

Only **TIMKEN** bearings roll so true, have such quality thru-&-thru

COPYRIGHT 1955 THE T.R.B. CO.